AN INTRODUCTION
TO
PHILOSOPHICAL ANALYSIS

BY

P. C. Chatterji, M.A.

KITAB MAHAL ALLAHABAD BOMBAY

"Then suppose you should ever try henceforth to conceive afresh, Theatetus, if you succeed your embryo thoughts will be the better as a consequence of to-day's scrutiny; and if you remain barren, you will be gentler and more agreeable to your companions, having the good sense not to fancy you know what you do not know. For that, and no more, is all that my art can effect; nor have I any of thatk nowledge possessed by all the great and admirable men of our own day or of the past."

—*Plato*

To My
PARENTS

PREFACE

The object of this book is to give an account of some of the main problems of critical, as opposed to speculative, philosophy. The effort throughout is to see clearly *what* the problems are and the emphasis is on method, namely, that of philosophical or conceptual analysis. Conclusion sare few and are mainly in the nature of tentative suggestions—that indeed seems to me not only in keeping with the modern temper but also the very essence of the philosophic spirit. While this attitude to philosophy may be commonly accepted in the West, here in India we still think of it as a sort of mythological world-picture, which the seer or saint pours out after several hours of concentration. The study of philosophy at Indian universities, therefore, reduces itself to imbibing the wisdom of the ancients and the only tangible result of western contact appears to have been the replacing of our own philosophic gods by Hegel and Bradley. Although I have had the Indian undergraduate chiefly in mind, I hope my book will be of use to others in the initial throes of philosophical study.

In dealing with the various problems I have dipped into the history of western philosophy. References to the views of past thinkers are not intended to be exhaustive; I have merely taken what happened to be necessary or my immediate purpose. Incidentally, if I may have helped to show the continuity between the views of past and present-day philosophers, that will not have been entirely in vain; too many students to-day seem to imagine that philosophical analysis began in the twentieth century.

My numerous obligations are acknowledged in the text. I have learnt most from the published works of

Moore, Russell and Broad and it will be evident throughout that my spiritual home is Cambridge. That debt, of introducing me to Cambridge philosophy, I owe to my father G. C. Chatterji, Vice-Chancellor, Rajputana University who had studied under McTaggart, Moore and Russell in the heyday of Neo-Realism, when the new methods seemed to hold out such great hopes for the future, when precision had not become a fetish caging the subtle light of clear English prose. Some of that faith in analysis still remains despite the depressing effects of Wittgenstein and Wisdom. Last but not least my wife who first suggested the idea of this book and without whose unfailing encouragement it would never have been completed.

<div align="right">P . C . Chatterji</div>

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INTRODUCTION

Philosophy—a word almost any one would use without hesitation, a word with a host of associations recalling the sublime utterance of the poet or mystic at one extreme and yet not inappropriate for the humble peasant smoking his pipe with an air of detachment from the world around him. Pressed a little closer as to the meaning of the word, the non-professional might find it difficult to state what precisely he means by philosophy. In all probability, however, he would consider it a near cousin to religion and some types of poetry. The object of this introduction is to explain what we mean by philosophy generally and by critical philosophy in particular. We shall find that the branch of the subject we mean to discuss in this book is more akin to science than religion.

What then is philosophy? In Plato's time the word philosophy was used to mean love of truth and a philosopher was a person who spent his time searching for truth. Socrates, for instance, who personifies the ideal of the philosopher, spent most of his life arguing with the sophists or Greek teachers on such subjects as morality and the nature of the soul. One important point to bear in mind is that at this stage philosophy included all branches of learning. The early Greek philosophers who preceded Socrates, were what would now be called physicists, persons interested in discovering the elements of which the universe is made and finding out the nature of matter. In Socrates' own time moral questions were more in the foreground.

At this stage in its development three facts should be remembered about the subject matter of philosophy:

(a) That philosophy included all branches of learning, (b) that the distinctions between the different sciences had not been clearly demarcated and their foundations had not been laid, (c) that the knowledge gained by philosophy on various subjects was speculative.

Aristotle who is the next great Greek philosopher after Plato was also a scientific genius of the first order. Aristotle distinguished and demarcated the fields of the main sciences and laid the foundations of several of them by collecting a vast amount of fundamental data—particularly in biology. From this time the different sciences started breaking away from the parent study of philosophy, establishing their different conclusions on the solid grounds of observation and experiment. Sociology is the latest science to have grown independent wings—the process having been accomplished only in very recent years.

From what I have said regarding the historical relation between philosophy and the sciences it might appear that every advance for science has been a defeat for philosophy and a time will come when there will be no place left for philosophy since all the departments of nature would be studied by the special sciences. But to draw any such conclusion would be a mistake. The differences between philosophy and science are fundamental and may be stated as follows:—

(a) Every science studies an aspect of nature whereas philosophy is interested in the nature of the universe or reality as a whole. For instance, no science can tell us whether the universe as a whole is purposive or whether it works in accordance with purely mechanical laws, whether the universe is moving progressively towards some ideal or whether it is bound to disintegrate to nothingness. The different sciences answer analogous questions within their particular spheres of interest—physics reduces all material phenomena to mechanical laws,

while biology tends to give us a purposive view of animal behaviour. This being so, some study is necessary to co-ordinate the different and often conflicting results of the sciences and thus give us knowledge of the nature of the universe as a *whole*.

(b) Working within certain definite limits of subject matter, science also accepts certain postulates as final, postulates and assumptions which it does not criticise. Thus, for example, g ometry as the science of space does not attempt to enquire whether space is real or an illusion. Physics which studies matter in motion does not ask whether material bodies are entirely different from mind or spirit, or whether they are in fact spirits of a rudimentary kind. In addition there are some conceptions such as *cause* and *substance* which are used by several of the sciences but no science enquires as to what exactly is meant by these concepts. It is for this reason that it is said that science does not seek to discover the *ultimate* nature of reality. It is content to work within the frame-work of certain notions which it does not criticise.

Bearing these two points in mind we might define philosophy as a study of the ultimate nature of reality as a whole. This definition brings out the two above-mentioned distinctions between philosophy and science. The important words in this definition are *ultimate nature of reality* and *reality as a whole*. Thus, while on the one hand, philosophy studies the *ultimate* nature of reali y, by not accepting uncritically the assumptions of science, on the other, it endeavours to present us with a comprehensive picture of reality as a *whole* and so goes beyond the special sciences which give us knowledge only of a particular branch of nature. In other words, we may say that philosophy seeks to give us both a deeper and more complete knowledge of reality. These two aspects of philosophy, the one devoted to an examination of

the foundations of science, and the other to framing a picture of reality as a whole, have been described in recent times as Critical and Speculative Philosophy. It is with critical philosophy that we shall be concerned in this book.

But we have not yet completed our task of distinguishing philosophy from science. There exists a third distinction between them:

(c) Philosophy is also concerned with value. Science as we have seen is interested in studying the different aspects of nature. In his study of a particular branch of nature the scientist is only concerned with the facts as they are, with what actually exists. He is not concerned or interested in what *ought* to exist either for moral, aesthetic, or even practical reasons. Philosophy, on the other hand, is also interested in discussing the nature of value. It is interested in getting to the bottom of such statements as 'love is good', 'to hate is morally evil', 'this piece of music is beautiful' and so on. Do we really have a distinctive idea in our minds when we speak of goodness and beauty, evil and ugliness or are these terms merely words in which we cover up our desire for one set of things and our dislike of others ?

Unfortunately that aspect of philosophy which deals with value has not yet acquired a name which is generally accepted. On the other hand, branches of philosophy which deal with specific kinds of value or value as it affects special branches of human activity are well established. For example, ethics or moral philosophy deals with value as it affects human conduct. It enquires as to what things are good in themselves, whether these are certain states of consciousness which the individual ought to try and achieve or whether the moral perfection of man consists entirely in performing right actions which are obligatory irrespective of the results they produce. In other words, ethics examines the concept

of value in relation to human conduct. In the same way aesthetics deals with value in relation to art. It attempts to discover the nature of beauty and seeks to establish principles by which works of art may be judged as beautiful or ugly . But the point to be noted here is that there is something common to the studies of both ethics and aesthetics which is not peculiarly the concern of either. This is the question: What is value? In the past this question was usually, though not consistently, discussed in books on ethics, but in recent years a good deal of independent work has been done on analysing and clarifying the conception of value. The attempt to answer this question may legitimately be considered a branch of critical philosophy and it will therefore be of interest to us in this book.

In discussing the nature of philosophy, we have so far considered its peculiar subject matter. We have said that it enquires into:—(a) the nature of the universe as a *whole*, (b) the *ultimate* nature of reality, and (c) the nature of value. In these respects, it is distinct from science. But there is another way in which philosophy is different from the sciences, a way which has nothing to do with its subject matter. This is the peculiar method of philosophy. We are not now speaking of the different and even opposing methods adopted by philosophers in their attempts to penetrate the heart of reality. We are referring to something which is common to all philosophy. The essence of this method may be considered to be the belief in Reason—in philosophy we must try and find reasons for everything we believe in. In this respect, philosophy is very different from religion, for instance, where believers are supposed to take their opinions on trust from some authority—usually that of the founder who is supposed to possess special grounds for knowing the truth on all subjects. But this will not do in philosophy. Philosophy is no respecter of authority except the authority of Reason. It is on this ground . that

philosophy has been described rather as an activity than a body of knowledge—the activity of making propositions clear, or as an unusually serious effort to think clearly. The philosophic spirit is thus best embodied in the life of Socrates—in his constant eagerness to know the truth, his hearty scepticism of accepted opinions and his dispassionate and earnest effort to find a rational solution to problems. Certainly we shall not have succeeded in half our task in studying philosophy if we do not acquire this attitude of serious enquiry and make it part and parcel of our normal response to everyday problems. For this attitude is itself one of the chief benefits of the study of philosophy.

WHAT IS ANALYSIS

In our introductory chapter we stated that the aim of critical philosophy is to examine the postulates or assumptions of science. The object of this examination is two-fold:—(a) to give us a more precise and clear idea of what these postulates and assumptions are, and (b) to enquire whether we have any good reasons for accepting them. Mr. Wisdom maintains[1] that the function of critical philosophy is confined to our first point, that the aim of critical philosophy is, as he puts it, merely to seek clarity, not truth. We shall find, however, that his view is erroneous. The entire history of philosophy shows that the object of philosophers has been not only to clarify our ideas, but also to try and show them to be true or false.

The question arises: How are we going to set about to achieve this end or what method are we going to employ? The answer is, briefly, through analysis or definition. Analysis is as old as philosophy itself and in fact is employed in everyday conversation by people who know nothing about philosophy. Consider, for instance, this argument which might well occur in any drawing-room as to whether Confucius was a great religious leader. A is arguing in favour and B against. Then suddenly C, who has been listening to the discussion breaks in declaring that Confucius was not a religious man at all. How so, enquire A and B and C answers, "because Confucius did not believe in God, merely in morality, and no one who does not believe in both can

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be called a religious man." In this case, C may be said to have analysed or given a definition of the concept 'religious man.' And his analysis, if accepted, will put an end to the argument. Instances of this kind abound in common life, and one might almost say that this sort of method is always adopted by people when they try to think clearly about any subject whatever.

The example we have just given is clearly an instance of analysis and although philosophers, particularly in the 20th century, have practised analysis, they have different things to say when they attempt to describe what it is that they are doing. We shall find, however, that this is not a strange or unique case—the more fundamental questions are frequently the last to be asked and as Bertrand Russell says, the more simple questions logically are always the most difficult to answer. This lack of agreement on what is meant by analysis is something of a stumbling-block in our way. We will have to do some reading between the lines and not all of what we say may be acceptable to the chief exponents of critical philosophy.[1]

To start off with, let us decide on one or two points of usage which will be helpful as we go on. We shall call that which is to be analysed the *analysandum,* and that into which it is analysed the *analysans.*

The first point we must be clear about is: What is it that we analyse or what is the analysandum? Some persons have stated that the analysandum is a sentence. But this view seems to be incorrect. It would be nearer the truth to say that what we analyse is the *meaning* of the sentence, or the proposition embodied in it. Although

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1 It is interesting to note that after 50 years of vigorous practice, philosophers in England and America are not in the least agreed on what they mean by analysis. Compare, for instance, Johnson's statement in his *Logic,* Vol. I, Chapter vii with the statements of C. H. Langford and Moore in the *Philosophy of G. E. Moore* edited by Schilpp.

it is difficult to say exactly what a proposition is, the difference between a sentence and a proposition is easily indicated. Thus two sentences in different languages which are translations of each other, express but a single proposition. And a proposition can be stated in several different sentences in the same language and even by means of symbols other than words. Briefly, a proposition is whatever can be asserted, believed or supposed.

Moore and Mr. Wisdom (in one of his early works) while explicitly denying that the analysandum is a sentence, maintain that it is always a proposition or a concept. We find in practice, however, that in most actual cases of analysis the analysandum is a concept rather than a proposition. In his book *Interpretation and Analysis*, Mr. Wisdom gives the following example. He takes the proposition: X is a brother, and says this can be analysed into the propositions (i) X is a male. (ii) There is an A and B who are the parents of X. (iii) There is a Y of whom A and B are also the parents. But it seems to us that what he has analysed here is the concept 'brother' rather than the proposition 'X is a brother.' It is possible, however, that the analysis of a concept can be stated in such a way as to include the analysis of a proposition in which it occurs. Thus nothing will be lost if we stick to the view, which is also simpler, that the analysandum is always a concept.

It is implicit in all that we have said that the analysandum must always be complex. The function of analysis is to determine the simpler concepts which are involved in it. Thus, in the instance cited earlier, the complex concept of religion was analysed into two simpler concepts—belief in God and belief in morality. According to Aristotle, analysis or definition means giving the genus and differentia of the term defined. By the genus of a term is the next more general class to

which a species belongs and by differentia, the peculiar characteristic or characteristics which distinguish it from other species of the same genus. Thus in defining the term spaniel we would have to give the genus, gun-dog and then to distinguish it from other kinds of gun-dog such as Labradors and Pointers. We would have to add the differentia 'long-eared and long-haired gun-dog.' Several excellent examples of definitions of this kind are to be found in Spinoza's *Ethics*.

But while analysis may in some instances mean defining in the Aristotelian sense, this is not always the case. In the instance we have already cited, that of the definition or analysis of religion, we gave as our analysans 'belief in God' and 'belief in morality'. And these two, it is clear, cannot be subordinated one to the other as the relation of genus to differentia demands.

We must go on to enquire more closely into the relation which must hold between the analysandum and the analysans in any definition. The most important facts in this relation are as follows:—

(1) The analysandum and analysans must have exactly the same meaning. This being the case, any sentence which expresses the analysandum will be synonymous with any expression which states the analysans. The term 'spaniel' and 'long-eared and long-haired gun-dog' are logically equivalent or have the same meaning and the two verbal expressions are therefore synonymous. The fact that the verbal expressions of the analysandum and the analysans must be synonymous gives us a convenient method of testing the validity of any definition. We have merely to see whether the substitution of the analysans for the analysandum in any sentence alters its meaning. If the meaning changes the analysis is obviously incorrect. We shall find ourselves resorting to this test frequently during the course of our discussions.

(2) But although the verbal phrases or sentences which express the analysandum and analysans must be synonymous, it is equally necessary that they should be *different*. If the two expressions were identical we would have not the definition of a concept but a *tautology*. Thus statements of the form 'A is A', 'man is man', etc., are tautologies, not definitions. In tautologies the verbal expressions of the analysandum and anlysans are identical.

(3) The verbal expression of the analysandum and analysans, though synonymous must be different and we must enquire as to the respects in which they must differ. The analysans in any proper definition, must explicitly mention concepts not mentioned in the ana-lysandum. Thus, in our example, the analysans of 'spaniel' explicitly mentions the concepts 'gun-dog', 'long hair and ear.'

(4) The concepts mentioned explicitly in the analysans which are not stated in the analysandum are sometimes spoken of as *parts* of the analysandum. If we are to fall in with this usage we must realise that the word *part* is being used in a loose and inaccurate way. A concept is not composed of parts as a chair or table is. By *part*, in this context, all that we can mean is that the analysans consists of concepts which we must know if we are to know the analysandum. The meaning of the analysandum thus involves the meaning of the analysans, which must, therefore, be considered the more fundamental or simple of the two.

It will be noticed from what we have said that by analysis we mean always real definition as opposed to verbal definition. Verbal definitions are the kind which you find in dictionaries, explanations as to how a word is used in a particular language. In philosophy it would be a statement of how you intend to use a word

"A definition is a declaration that a certain newly-introduced symbol or combination of symbols is to mean the same as a certain other combination of symbols of which the meaning is already known."[1]   The point which we are wanting to bring out here is one which we referred to in the beginning of this chapter. We stated then that according to Mr. Wisdom the object of critical philosophy is merely to seek clarity, not truth. It will be seen now that Mr. Wisdom's remark implies that all analysis must be verbal definition not real definition, for obviously if the function of definition is only to state how we intend to use symbols the question of truth will not arise. Thus, for instance, if you coin a new word 'abracadabra' and declare that by it you mean what other people mean by 'Good' it would be simply meaningless for some one to call this definition false. On the other hand, if definition means real definition or the analysis of ideas comprising the analysandum, then it is plain that a definition, apart from clarifying our ideas may also be true or false.

A certain class of philosophers maintains that all definitions must be verbal and the main reason for this contention is the belief that words do not stand for or represent concepts. We will enquire into the validity of this theory later in this book, but at this stage we must indicate why it is unacceptable to us and why we consider real definition not only possible but reasonable. We cannnot do better than to quote from Russell's *Principia Mathematica*, where the writer starting with a theory of definition as verbal definition, as indicated in the passage just cited, is led on to recognising the possibility and importance of real definition. He writes: "It is to be observed that a definition is, strictly speaking no part of the subject in which it

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1 . *Principia Mathematica*, Vol. I, pp. 11-12.

occurs. For a definition is concerned wholly with the symbols, not with what they symbolise. Moreover it is not true or false, being the expression of a volition, not of a proposition. Theoretically, it is unnecessary ever to give a definition.........[Definitions] are, strictly speaking, mere typographical conveniences. Practically, of course, if we introduce no definitions, our formulæ would very soon become so lengthy as to be unmanageable; but theoretically, all definitions are superfluous.

"In spite of the fact that definitions are theoretically superfluous, it is nevertheless true that they often convey more important information than is contained in the propositions in which they are used...... [one reason for this fact is that] when what is defined is [as often occurs] something already familiar, such as cardinal or ordinal numbers, the definition contains an analysis of a common idea, and may therefore express a notable advance................................. In such cases, a definition is a 'making definite' : it gives definition to an idea which had previously been more or less vague".[1]

Later we find Russell acting on the assumption that definition is real definition and definitions may therefore be true or false. He criticises the Italian mathematician Peano's definition of 'number' on the ground that on Peano's definition every number would be liable to several interpretations. Russell writes : "We want to have ten fingers and two eyes and one nose. A system in which '1' meant 100 and '2' meant 101, and so on, might be all right for pure mathematics but would not suit daily life. We want '0' and 'number' and 'successor' to have meanings which will give us the right allowance of fingers and eyes and noses. We have already some knowledge......of what we mean by '1' and '2' and so

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1 *Principia Mathematica*, Vol. I, pp. 11-12.

on, and our use of numbers in arithmetic must conform to this knowledge".[1]

Before we end this chapter we must explain briefly an important distinction which has been made by Russell. This is the distinction between knowledge by *acquaintance* and knowledge by *description*. Russell points out that there are two ways in which we may be said to know a thing. We may know it by acquaintance, that is through direct awareness, as I may be said to know my friends or the books opposite to me. On the other hand, knowledge may be indirect, as for instance, my knowledge of Napoleon or of London, which I have never visited, subjects on which my information is gained from books or other people. Much the larger part of our knowledge is of this kind. Knowledge by acquaintance, as Russell says, is knowledge *of* things, whereas knowledge by description is really *about* them. Knowledge by acquaintance is the most certain kind of knowledge there is, and is the basis of all knowledge by description which is inferred from it. Thus my knowledge of Napoleon which is by description, is based on the acquaintance I have with particular books on him and so on.

We shall have occasion more than once during the course of the following pages to refer to the distinction which we have just explained. In fact the whole problem of the analysis of perceptual knowledge may be stated as the attempt to define clearly the range of acquaintance.

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1 *Introduction to Mathematical Philosophy*, p. 9.

PERCEPTION—THE APPROACH TO IDEALISM

Perceptual error is a common fact of human experience. A straight stick appears bent when looked at in water, the sun looks larger when it is on the horizon than when it appears high up in the sky, and we have all heard of the oft-repeated story of people taking fright at a piece of rope being mistaken for a snake. These ordinary occurrences, seemingly unimportant and easily accounted for, raise in fact a philosophical problem of the greatest difficulty. Take, for instance, a more complicated case. Many of you have no doubt watched the changing play of colours on a mountain lake. If there are thick clouds overhead, the colour of the water will appear dark blue, perhaps even black. Later, as the clouds lift and fly past, the colour of the water also changes, varying through all the different shades of blue and green. Which of these colours, you might ask, is the real colour of the water? Or again, is it the case that colour is something which does not exist in any object such as water, but depends on several factors including a highly-developed retina? In the same way with the other qualities : are shape and size qualities of particular objects, or is the existence of these qualities dependent, at least in part, on the position of the observer and his mental and physical makeup? Philosophers in the past have suggested that such facts throw doubt on the reality of existence of the external world and the question we have to face is : what good grounds are there for belief in the external world? In recent years, however, Moore, Price and others have argued that no one doubts the existence of the external world. What is in question is the correct analysis of perceptual objects.

The problem of perception has a long history in European philosophy. It was, for instance, deeply considered by the Greeks, but in modern times the problem was first clearly stated by the English philosopher John Locke. Locke, who lived from 1632 to 1704, believed that the two substances of matter and mind were so different from each other that there could not possibly be any interaction between them. It followed, therefore, that perception could not mean a direct awareness by the mind of the external world of matter. How then, the question arose, did the mind become aware of material objects ? Locke's answer was that the mind knew them by means of ideas which were mental copies or images of external objects. Ideas were not, however, entirely faithful representations of objects. For example, Locke would say that my idea of the table I am writing at has shape, size, weight and colour, but the table as it actually exists in the outside world has the first three qualities only and not the last one. In other words, Locke distinguished two types of qualities, which he called primary and secondary. The primary qualities are figure, motion, extension, impenetrability and divisibility, while secondary qualities include such qualities as smell, taste, hardness, softness and so on. The former are the inseparable qualities of matter, whereas the secondary qualities, Locke believed, exist only for or in a mind—colour, touch and taste, for instance. Locke argued that they vary with different people and must therefore be subjective or mind-dependent.

We shall examine Locke's arguments for the belief that secondary qualities are subjective later in this chapter. Let us summarize here briefly the main points of his theory. These may be stated as follows : (1) the mind is aware only of ideas ; (2) ideas are copies or representations of material objects in the outside world ; (3) material objects are characterized by primary qualities

alone—secondary qualities are subjective or mind-dependent.

Locke's theory was modified in several fundamental respects by the Irishman, Bishop Berkeley, who had read the former's *Essay on Human Understanding* with great keenness while he was a student in Dublin. Berkeley supported Locke's arguments for the subjectivity of secondary qualities but he carried unorthodoxy further by using them also to undermine the objectivity of the primary qualities. The arguments which showed that the secondary qualities were subjective, he maintained, showed also that the primary qualities were equally mind-dependent. Experience itself seemed to point to the fact that the two types of qualities were on the same footing; we never perceive colour, for instance, which is not also extended and of some shape, and in the same way we never experience extension pure and simple without some body of secondary qualities. In short, the distinction between primary and secondary qualities is untenable and according to him both were subjective.

But if both primary and secondary qualities are subjective, what, we might ask, becomes of matter which is believed to be the essence or substance of objects in the external world ? For as Berkeley pointed out, whenever we start trying to find out what a material body consists of, we can only discover primary or secondary qualities—matter or substance which *has* the qualities we never meet. Berkeley therefore discarded it as a useless notion which had no place in his philosophy. All that Berkeley was left with, thus was the mind and its ideas. But it is not to be supposed that he believed that the external world of objects did not exist. As Berkeley says in his main metaphysical work *The Principles of Human Knowledge*, his intention was not to try and establish that all things are ideas, but the opposite conclusion that all ideas are things.

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Berkeley's position with reference to the problem of perception may be summed up in his famous phrase *esse is percipi* or existence is perception. The external object which is a complex or *cluster* of primary and secondary qualities exists only when it is being perceived. In his theory, it will be seen that Locke's fiction of a mental copy of the material object which the mind knows directly in perception, is no longer necessary. Since the external object is no longer *material* but made up of ideas, there is no difficulty in the mind being directly aware of it. And in any case as Berkeley pointed out, the representative theory contains an obvious difficulty. If the mind is aware only of ideas and never of objects, we cannot possibly know that the ideas are *copies* of the objects. To know that a thing is a copy of another, we must have direct knowledge of both, the copy and the original.

Berkeley's contribution to the theory of knowledge may thus be summarised in the following points: (1) primary or secondary qualities are on the same footing so far as their dependence on mind is concerned—the existence of both depends on their being perceived by a knowing mind. Recent writers have pointed out that by placing the primary and secondary qualities on an equal footing, Berkeley was opposing what Prof. Whitehead has called 'the bifurcation of nature'. This is a theory, common among writers of the 17th century, by which nature is divided into two sets of categories or qualities, mathematical and non-mathematical, and only the former are believed to characterize nature. Berkeley, on the other hand, was contending that 'the red glow of sunset is as real as the dance of molecules in ether'. (2) Berkeley also brought out the point that perception must be a two and not a three-term process. In other words, mind must have direct awareness of objects if there is to be genuine knowledge.

But although Berkeley had accepted the dictum *esse is percipi*, he did not follow it to its logical

conclusion. If to exist means to be perceived, then the objective existence of the external world is immediately undermined. The world is reduced to myself and my fleeting and discrete ideas. This is known as solipsism, a doctrine which philosophers generally have done their best to avoid, not only because it is uncomfortable and seems to run counter to the general drift of our experience, but also, perhaps, because the theory is so difficult to refute. Berkeley, like other thinkers, shirked this all too obvious corollary to his doctrine. His way out of the difficulty was the somewhat common makeshift of metaphysicians in trouble, an appeal to God. *Esse is percipi,* Berkeley emphasised, but only where God is concerned. For finite human beings perception is as much a business of sensing *given* data as commonsense would have us believe. In other words, nature, or the choir of heaven and earth, as a later philosopher picturesquely described it, exists because it is perceived by God and that is why it continues to exist even when neither you nor I perceive it.

The Berkeleian theory has been admirably summed up in the following limerick :

> There was a young man who said : "God
> Must think it exceedingly odd
> If he finds that this tree   .
> Continues to be
> When there is no one about in the Quad".
>   Reply :
> Dear sir :
> Your astonishment's odd
> I am always about in the Quad.
> And that is why the tree
> Will continue to be
> Since observed by
>   Yours faithfully,
>   God.

The theory that external objects exist only when they are being perceived by a mind has been commonly known as subjective or epistemological idealism. For reasons, which we need not explain here, we will refer to it as epistemological idealism. The classical statement of this theory has been given once and for all by Berkeley ; later writers have merely dotted the 'i's and crossed the 't's and perhaps occasionally omitted some of the arguments presented by him. We may, therefore, stop here in our statement of the historical background of epistemological idealism and turn to the main arguments with which this theory has been supported by its chief followers.

It will be convenient to divide the arguments for epistemological idealism into two classes—empirical arguments and logical arguments. Let us deal with them in turn.

I. Empirical arguments may again be divided into those based on the relativity of perception and others.

Arguments based on the relativity of perception, urge that a particular object appears to have different qualities in different circumstances, and since it cannot have two contrary qualities, it is concluded that it has neither.

An instance of an argument of this type is Locke's well-known 'hands in water' experiment. Take three jars of water, A, B and C. Of these A should be hotter than B, and C should be colder than B. If a person puts his left hand into A and his right into C and after a few minutes puts both into B, then this water will appear cold to the left hand and hot to the right. But Locke, or an epistemological idealist would ask, how can the same water have two different temperatures at the same time. His answer is that in fact the water has no temperature at all, the degree of heat depends on the nature and past history of our sense organs.

The argument against the reality of colour and size, to take examples from both primary and secondary qualities, closely follows the pattern of the reasoning given above.

To take size or extension first : a tower looks one size from a distance of a hundred yards and much smaller when viewed at a distance of a mile. It seems impossible to decide which is the real size of the tower. Size seems to depend entirely on one's relative position to the object apprehended. It will not do to reply that the size of the tower is 200 feet and this is the invariable size of the tower. For it will be said that a *measure* is only a conventional symbol or sign of a certain piece of extension. What we want to know is what is a yard or a foot. And here the trouble starts again, for both a yard and a foot look different when viewed from different distances.

Berkeley argues that in broad daylight a rose appears to have one colour to a man with normal eye-sight, another colour to a man suffering from jaundice, and a third colour to a man having a deficient number of cone structures on his retina. And, since the rose cannot have three different colours at the same time, Berkeley concludes that the rose has no colour at all. The appearance of colour depends on the structure of the organ of sight and any effects which other organs may have on it.

Hume, who was a successor of Berkeley's, produced what he believed was a conclusive example of how an object could be *created* by an individual's sense organ. The case he took is that known as diplopia. If you press your eye-ball with your finger and then try and look at a lamp post, you will see not one lamp post but two. Here, Hume, urged, was an obvious instance of how a sense organ *alone* could create an object—and all this was adduced to show that it is not absurd to maintain that the existence of objects depends *entirely* on our sense organs.

A different line of argument has been used both by Berkeley and Bradley, one of the finest exponents of idealism in the 20th century. This is to show how certain secondary qualities are mixed up with pleasure and pain, and then to argue that since pleasure and pain exist only for a mind, so also do these qualities. Bradley has used this type of argument against smell and taste but his statement is not as clear and precise as Berkeley's. We cannot do better than to quote from his first dialogue between Hylas and Philonous, a fine illustration of philosophical reasoning, and also of the dialogue, a delightful form of philosophical exposition. In this dialogue, Philonous takes the part of Berkeley against Hylas, who is presented as a questioner holding the commonsense realistic view. Philonous first forces Hylas to make certain admissions in the case of heat, which are later applied also to taste and smell.

"Ph : Heat, therefore, if it be allowed a real being, must exist without the mind ?

Hy : It must.

Ph : Tell me, Hylas, is this real existence equally compatible to all degrees of heat, which we perceive ; or is there any reason why we should attribute it to some, and deny it to others ? And if there be, pray let me know that reason.

Hy : Whatever degree of heat we perceive by sense, we may be sure the same exists in the object that occasions it.

Ph : What ! the greatest as well as the least ?

Hy : I tell you, the reason is plainly the same in respect of both. They are both perceived by sense ; nay, the greater degree of heat is more sensibly perceived ; and consequently, if there is any difference, we are most certain of its real existence than we can be of the reality of a lesser degree.

Ph : But is not the most vehement and intense degree of heat a very great pain ?

Hy : No one can deny it.

Ph : And is any unperceiving thing capable of pain or pleasure ?

Hy : No, certainly.

Ph : Is your material substance a senseless being, or a being endowed with sense and perception ?

Hy : It is senseless without doubt.

Ph : It cannot therefore be the subject of pain ?

Hy : By no means.

Ph : Nor consequently of the greatest heat perceived by sense, since you acknowledge this to be no small pain ?

Hy : I grant it.

Ph : What shall we say then of your external object ; is it a material substance, or not ?

Hy : It is a material substance with the sensible qualities inhering in it.

Ph : How then can a great heat exist in it, since you own it cannot in a material substance ? I desire you would clear this point.

Hy : Hold Philonous, I fear I was out in yielding intense heat to be a pain. It should seem rather, that pain is something distinct from heat, and the consequence or effect of it.

Ph : Upon putting your hand near the fire, do you perceive one simple uniform sensation, or two distinct sensations ?

Hy : But one simple sensation.

Ph : Is not the heat immediately perceived ?

Hy : It is.

Ph : And the pain ?

Hy : True.

Ph : Seeing therefore they are both immediately perceived at the same time, and the fire affects you only with one simple or uncompounded idea, it follows that this same simple idea is both the intense heat im-

mediately perceived, and the pain ; and, consequently, that the intense heat immediately perceived is nothing distinct from a particular sort of pain.

Hy : It seems so.

Ph : Again, try in your thoughts, Hylas, if you can conceive a vehement sensation to be without pain or pleasure.

Hy : I cannot.

Ph : Or can you frame to yourself an idea of sensible pain or pleasure in general, abstracted from every particular idea of heat, cold, tastes, smells, etc ?

Hy : I do not find that I can.

Ph : Doth it not therefore follow, that sensible pain is nothing distinct from those sensations or ideas, in an intense degree ?

Hy : It is undeniable ; and, to speak the truth, I begin to suspect a very great heat cannot exist but in a mind perceiving it.

Ph : What ! are you then in that sceptical state of suspense, between affirming and denying ?

Hy : I think I may be positive in the point. A very violent and painful heat cannot exist without the mind.

Ph : It hath not therefore according to you, any real being ?

Hy : I own it.

Ph : But what will you say, Hylas, if it shall appear that the case is the same with regard to all other sensible qualities, and that they can no more be supposed to exist without the mind, than heat and cold ?

Hy : Then indeed you will have done something to the purpose; but that is what I despair of seeing proved.

Ph : Let us examine them in order. What think you of *tastes*—do they exist without the mind, or not ?

Hy : Can any man in his senses doubt whether sugar is sweet, or wormwood bitter ?

Ph : Inform me, Hylas. Is a sweet taste a particular kind of pleasure or pleasant sensation, or is it not ?

Hy : It is.

Ph : And is not bitterness some kind of uneasiness or pain ?

Hy : I grant it.

Ph : If therefore sugar and wormwood are unthinking corporeal substances existing without the mind, how can sweetness and bitterness, that is, pleasure and pain, agree to them ?

Hy : Hold, Philonous, I now see what it was deluded me all this time. You asked whether heat and cold, sweetness and bitterness, were not particular sorts or pleasure and pain ; to which I answered simple, that they were. Whereas I should have thus distinguished :— those qualities, as perceived by us, are pleasures or pains ; but not as existing in the external objects. We must not therefore conclude absolutely, that there is not heat in the fire, or sweetness in the sugar, but only that heat or sweetness, as perceived by us, are not in the fire or sugar. What say you to this ?

Ph : I say it is nothing to the purpose. Our discourse proceeded altogether concerning sensible things, which you defined to be, *the things we immediately perceive by our senses.* Whatever other qualities, therefore you speak of, as distinct from these, I know nothing of them neither do they at all belong to the point in dispute. You may, indeed, pretend to have discovered certain qualities which you do not perceive, and assert those insensible qualities exist in fire and sugar. But what use can be made of this to your present purpose, I am at a loss to conceive. Tell me then once more, do you acknowledge that heat and cold, sweetness and bitterness (meaning those qualities which are perceived by the senses) do not exist without the mind ?

Hy : I see it is to no purpose to hold out, so I give up the cause as to those mentioned qualities. Though I profess it sounds oddly, to say that sugar is not sweet.

Ph : But, for your further satisfaction, take this along with you : that which at other times seems sweet, shall, to a distempered palate, appear bitter. And nothing can be plainer than that divers persons perceive different tastes in the same food ; since that which one man delights in, another abhors. And how could this be, if the taste was something really inherent in the food ?

Hy : I acknowledge I know not how.

Ph : In the next place, *odours* are to be considered. And, with regard to these, I would fain know whether what hath been said of tastes doth not exactly agree to them ? Are they not so many pleasing or displeasing sensations ?

Hy : They are.

Ph : Can you then conceive it possible that they should exist in an unperceiving thing ?

Hy : I cannot.[1]"

II. We come now to other types of arguments for epistemological idealism which we have classified as logical.

(a) Berkeley maintains that we shall see the truth of his formula, esse is percipi, or to exist is to be perceived, if we try and answer the question : what do we mean by the term *exist* ? What, after all, he enquires do we *mean* by exist ? His answer is, that existence means nothing but to be perceived or to be part of our experience. In other words, if I say 'there is an odour', what I mean is that I smell it ; if I say 'there is a colour', I mean that I perceive it, and so on. In short, an absolute existence apart from the perception of it is unthinkable.

(b) It has been argued both by Berkeley and by Hume that the senses alone cannot provide adequate

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1 Frazer, *Three Dialogues—Works of Berkeley*, Vol. I., pp. 386-390.

ground for belief in the independent existence of an external world. The common man believes that objects exist independently of him and that through the senses we become aware of their existence. This, however, these philosophers contend is false. For, as they point out, the senses can only show us that an object exists while we are actually perceiving it. They cannot tell us anything about the nature of the object when we are not perceiving it, and it is the existence of the object when we are not perceiving it that commonsense is keen to establish. Of course, the difficulty would be overcome if the process of sensing made no difference to the object sensed. But this, as will be seen, is the very point at issue.

(c) There is another argument for the view that an object cannot exist apart from its perception, on which Berkeley has laid a good deal of stress. This may be called the argument from the falsity of abstraction. Locke had spoken of abstract ideas, an idea of a triangle, for instance, which was neither equivalent, nor isosceles nor scalene. He had maintained that the mind can form abstract ideas and that such ideas existed. Berkeley argued that the corollary to this doctrine in the epistemological sphere was the doctrine that colour, taste and qualities generally, can exist independently of being perceived, or in abstraction from that whole of experience in which we become aware of them. Perception, as Berkeley says, is a whole which includes a mental event, an act of perceiving on the one hand, and on the other an object perceived, which is described as a material fact. And it is a mistake to conclude that either of these two aspects of a unified whole can exist apart from the other.

We have presented this point of Berkeley's here because he uses it as an argument for his idealism. But the issue raises several difficulties and is in fact a problem in itself. It will be dealt with fully in a separate chapter.

PERCEPTION (CONTD.)—THE BASIS OF REALISM

In the last chapter we spoke of the origin of the problem of perception and sketched the stages by which the commonsense view developed, in the hands of the British empiricists, into the doctrine of epistemological idealism. Idealism, strange though it might appear, has had much the larger following among philosophers than any view of commonsense realism. Nevertheless, there has always been a *small* minority which has defended the claims of commonsense. While Berkeley was presenting his doctrine of immaterialism in England, Reid who may be considered the founder of the Scottish school, was vigorously criticising it along commonsense lines. His *Inquiry into the Human Mind on the Principles of Commonsense* which was published in 1764 remained very much alive more than one hundred years later by the influence it had on the Scottish thinkers Cousin and Sir William Hamilton. England and more particularly Oxford, meanwhile had exchanged the home brand of idealism for a continental variety under the influence of Kant and Hegel. It was against this doctrine that the contemporary movement of realism took the field round about the year 1900. John Laird in his *Study in Realism* draws attention to two important features of modern realism. Realism, he says, signifies an attitude and a tendency born in controversy with idealism and any realism defined to the quick becomes nothing but the private doctrine of the definer. This statement gives us a convenient principle on which to proceed with our chapter. In the first part we will

present a criticism of idealism from the realistic point of view and in the second we will sketch one of the simpler forms that realism has taken in the hands of a notable modern exponent.

Let us begin then with those arguments for idealism which we classed as empirical and see whether they are really capable of supporting the conclusions which have been drawn from them.

I. We started with a class of empirical arguments which attempted to show that since an object appears to have two different and incompatible qualities at the same time, it follows that the qualities are not qualities of the object at all, but are projected on to it by the mind. In other words, these qualities are subjective or mind-dependent. Following Dr. Broad, we shall describe these arguments as arguments from *Synthetic Incompatibility*. Let us now examine the specific arguments.

(i) Dr. Broad has given us a thorough and detailed criticism of Locke's 'hands-in-water experiment', which we outlined in the last chapter. Does the argument really establish synthetic incompatibility ? Dr. Broad points out that there are two theories about the localization of temperature, and we must examine the experiment on both theories, if we are to judge whether or not it is successful.

According to one hypothesis temperature is a quality of the object and is sensed by nerve centres situated in the skin. Thus what has to be established is that the *same volume* of water has two different temperatures at the same time. But Dr. Broad asks, can the experiment possibly fulfil this condition ? Obviously no. For, although the two hands differently doctored, may be placed in the same jar of water, the particles of water surrounding each will be *different*. The two hands will *not* be in the *same* volume of water. And there is no

contradiction or synthetic incompatibility in contiguous particles of water having different temperatures.

According to the second hypothesis on the localization of heat, temperature is localized not in the medium, but on the surface of the skin.   But in this case it is clear that even the ghost of synthetic incompatibility is not established.   For, it is two very different spots on the skin which register different heat sensations and there is obviously no contradiction in this.

(ii) Synthetic incompatibility is also the ground for rejecting colour and size as qualities which characterise external objects, as described in our last chapter.   There the argument was presented that an object appears to have different colours, or to be of greater or lesser magnitude depending on the nature and position of the observer, and, since, the object cannot have two or more colours, shapes or sizes at the same time, it is concluded, that colour, shape and size are subjective.

In this ca e realists reply that much more is deduced from the argument than it can possibly warrant.   If an object appears to have two different qualities which are synthetically incompatible two inferences are possible. Either that the object has one quality and not the other, or that it has neither.   Idealists jump to the latter conclusion without giving any reason for rejecting the former alternative.

But there is also one further fact to be recognised. And that is the limits of the argument.   At best it would go to show that sense-data (what we are directly aware of when we observe objects, such as patches of colour, raps of sound, etc.) are *partly* determined by the position of the observer, and the nature and limitations of his sense-organs.   The argument does not show that the qualities of the object as sensed or sense-data are *entirely* dependent for their existence on the knowing mind.

Before we finish with the argument from synthetic incompatibility there are two other points which we must notice. In the first place, the question arises what about this principle of synthetic incompatibility itself? We have assumed all along that it is true, but what *grounds* do we have for believing this to be true. As Broad has pointed out, the principle, which no doubt does appear to be true, could be defended on two grounds. Either it could be maintained that the principle is *a priori*, that is, self-evident or entailed by some self-evident truth, or else that it must be derived from experience. One thing is quite clear. The principle cannot very well be derived from experience for the very cases cited by the idealists show that objects do at least *appear* to have synthetically incompatible qualities. Experience then cannot be the ground for the supposed truth of the principle of synthetic incompatibility.

Is the principle then, either self-evident or does it follow from some self-evident truth? At first sight this does seem to be so. The principle seems to follow from the laws of identity and non-contradiction, the elementary propositions A is A, and A cannot be both B and not B at the same time. But the matter is not quite so simple for experience also does seem to be necessary to our principle. This will be obvious from the fact, that while synthetic incompatibility does seem to be applicable to some senses, such as size, shape, colour and heat, it seems obviously not to apply to sound. There seems to be no contradiction in supposing different sounds to be caused by one object or different sounds to pervade a single area of space. There also appears to be no way of determining *a priori* or apart from experience, the senses to which the principle is applicable.

The second point to which we wish to draw attention before we leave this subject is this : The considerations given above are not designed to show

that the variability of sense-impressions does not present a difficulty in the way of the commonsense view. It does. The point is that the arguments do *not* warrant the conclusions derived from them by idealists. Far more careful thought is necessary to examine their real implications and to see exactly what can be justifiably deduced from them.

(iii) We turn now to the case of diplopia which was cited by Hume as an instance where the existence of an object could be seen to depend *entirely* on the sense-organs. If I look at the table lamp in front of me and then press my eye with my finger, I see not one but two table lamps—one of them in Hume's opinion being *entirely* created by the sense-organ. But if I turn my head, still pressing my eye-ball, to another part of the room, I see not two lamps, but two chairs. This shows Hume's conclusion to be unwarranted. If the second impression of the table lamp had been dependent for its existence on my sense-organ *alone* I should have continued to see it even when I turned my head to the other part of the room.

(iv) The precise logical form of the argument against certain secondary qualities which Berkeley assimilates to pleasure and pain is a little difficult to get hold of. Let us first clear away interpretations of the argument which are *not* likely to be what Berkeley meant.

To start with we do not think it is plausible to suppose that heat and pain, for instance, are not two distinct sensations but are identical. This is not plausible even though Berkeley does say a high degree of heat *is* pain. If, however, such an identity were established—and it seems an obvious psychological fallacy to imagine any such identity—it might be easy to prove the subjectivity of heat.   But this, as we have said seems to be an unlikely interpretation of Berkeley's argument.

But could Berkeley be contending that heat is a species of pleasure-pain, and that taste is another species

of the same feeling ? It is possible that this might have been his intention, for in the passage cited in the last chapter he does also speak of taste as a *kind* of pleasure. It is true that if heat or taste were a species of pleasure, then pleasure being subjective, heat and taste would also be subjective. But if this were what Berkeley was contending, then we can say that his contention is certainly false. For, as a matter of psychological fact sensation is not a *kind* of feeling, the two functions are completely different from each other.

If the two interpretations given above are both unlikely and unsound is there any other possible way in which we can formulate Berkeley's argument ? One further interpretation does seem possible. The argument may be one of analogy. The drift of the argument may be as follows : Both feelings and secondary qualities are unreflectively localized in objects. Reflection shows that feelings cannot be localized in objects and in fact are subjective. Might it not be the case that secondary qualities, which are in other respects closely connected with feelings, are also like feelings in being subjective ?

In this form the argument is obviously weak. For in the first place the analogy is based on only a single point of resemblance between feelings and secondary qualities, the point that both are unreflectively localized in objects. Further, the fact that secondary qualities and feelings are closely *connected* with each other does not show that there is any further *resemblance* between the two. This fact, thus cannot help or strengthen the analogy. Analogy is anyhow a weak form of argument. But within its limitations its efficiency depends on one's ability to establish resemblance between two things on several points, and then on this basis to infer a resemblance on a further point. In the present case the similarity between secondary qualities and feelings is in one respect only.

II. In dealing with the logical arguments for idealism, we shall confine ourselves almost entirely to Professor Moore's famous essay on the Refutation of Idealism. This essay, which was published in 1900, was the first major assault against the then dominant school of absolute idealism and has had a tremendous influence on later philosophy both in England and America. Although since repudiated by Professor Moore we find that he still holds by the central theme of his essay which laid the foundations of the new realism.

What then are the main contentions of Professor Moore's paper ? Moore takes the thesis *esse is percipi* and enquires first as to what precisely is meant by it, and secondly, assuming that it is capable of a significant interpretation, what reasons can be given for believing it to be true.

(i) Esse is percipi, Moore tells us is capable of three different interpretations. In the first place it may be contended that percipi is another word for *esse*, that the two words are synonymous. In other words, *percipi* or *to perceive* may be taken as a *verbal definition* of *esse* or *to exist* : This is the way in which we might say, *homo sapiens is man*. Moore points out that if this is what is meant by saying *esse is percipi*, then the proposition is quite useless, for it is merely a tautology which asserts nothing. Instead of saying esse is percipi we might as well say percipi is percipi or esse is esse. In short, Moore shows that if by asserting esse is percipi idealists are giving us merely a verbal definition of esse, then the thesis is not significant and is not worth bothering about. Although Moore charitably passes over this interpretation as not being what is meant by idealists, one cannot help feeling that they may have fallen into this error by failing to be clear as to what is meant by definition. Berkeley's query : what do we mean by existence, and the way in which he answers it certainly arouses suspicion.

(ii) But esse is percipi may be capable of bearing another meaning. It may be used to express a relation between esse and percipi, such that percipi is a part of a whole which is esse. In other words, percipi plus X may together form esse. In such a case while esse would contain percipi as analytically part of itself, and therefore percipi could be inferred from esse, the reverse would not be possible. It would not be possible to infer esse from percipi. If such is the relation between esse and percipi there are two points which must be noted. (a) Either the assertion esse is percipi becomes non-significant since percipi is included in esse by definition, or (b) we must establish a necessary synthetic connection between percipi and the other part or parts, X, which together make up esse. If such a connection is established between percipi and X, then the proposition becomes immediately significant. For not only can we infer from esse the existence of percipi, but also, which is far more to the point, from percipi we can infer X and therefore esse.

(iii) And this, in fact is the third and only significant sense of the phrase esse is percipi. Let us put the matter a little more fully and comprehensively. The phrase esse is percipi will be significant if, and only if, it means that esse and percipi while signifying two completely different concepts necessarily imply each other. In other words, esse is percipi is significant if it asserts a necessary synthetic connection between esse and percipi Thus, if this were the case we could infer that if X existed, X would be perceived or X would be part of a sentient experience even though this might not be in the least bit apparent. The idealistic thesis then can be stated in the following points : (a) Esse and percipi are two distinct terms not definable in terms of each other.

(b) Esse and percipi are related to each other in such a way that if anything has *esse* it also has the

characteristic of being percipi or of being part of a sentient experience.

Moore's contention is, that the moment we point out that esse is percipi is significant only if it asserts a necessary connection between esse and percipi, we realize that the belief in its truth is totally unfounded. Of course, as he admits, the assertion is by its nature totally incapable of *proof*. You can not *prove* that esse implies percipi any more than you can prove any other proposition which asserts a necessary synthetic connection between two terms. The truth of such propositions depends on self-evidence or intuition—you must immediately *see* the truth of the proposition, and if you don't there is little any one can do to convince you of its truth. This, as will be apparent is a characteristic of all ultimate or simple propositions, there can be no proof or explanation for them since they themselves constitute the proof and explanation of other propositions.

Esse is percipi, then cannot be proved, but this is no reason for believing it to be false any more than it is a reason for believing it to be true. The question thus arises is it self-evident ? In answering this question, we will have to think hard about the thesis and then decide whether we do feel constrained by the proposition itself to admit its truth. For his part, Moore is quite definite that the answer will be in the negative— esse is percipi does not appear to him to be a self-evident truth.

Moore goes on to give us an analysis of sensation and to show that the analysis generally accepted by idealists cannot explain the facts.

Moore analyses sensation into two parts—consciousness, and what he calls the *object* of consciousness. It is on the basis of this distinction that it is possible to see exactly what is the relation between say, the sensation

of blue and the sensation of green.   There must be at least one common factor in the two which will explain their similarity in so far as they are both sensations. This common factor is supplied by *consciousness*.   On the other hand, the two sensations are also distinguishable, one being a sensation of blue and the other of green. The differentiating factor is supplied by the *object* of consciousness, which in one case is green and in the other blue.

Having drawn the distinction between consciousness and the object of consciousness, as the two factors in sensation, Moore accuses idealists of the mistake of confusing *green* with *the sensation of green.* What the idealists are guilty of when they maintain esse is percipi is to assert that there is no difference between the propositions : 'There is green' and 'there is the sensation of green'.   To do this, Moore points out, is to commit the self-contradictory error of identifying a part with the whole of which it is a part.   In other words, it is to maintain that the *sensation of green* which consists of two parts, *green* and *consciousness*, is the same thing as *green.* And this plainly is self-contradictory and therefore false.

Moore goes on to enquire :   What is the relation between consciousness and the object in sensation ? The relation is not that which idealists have spoken of as the relation between consciousness and the content of consciousness.   In its turn this is the relation between substantive and adjective, the relation of one thing being predicated of another.   For example, idealists would say that the relation of content to consciousness is the same as the relation between a book and the shape of the book such that you could say this book is *square.* In other words, the idealist would say that the relation between consciousness and object is the common relation of predication, like the relation between fire and heat, or table and hardness and so on.   Idealists, for reasons

which cannot be explained here, have tended to recognise, only this particular kind of relationship between things.

Moore argues that in point of fact the relation between *consciousness* and *object* in sensation is quite different from that of substance and quality. When I have a sensation of blue, blue is not a *quality* of the consciousness. I do *not* have a *blue consciousness*. What I have is a consciousness *of* blue, which is a very different thing. In other words, in sensation, consciousness is related to its object in a unique and indefinable way, it is the relation of *knowing* or *awareness*. Thus when I look at a patch of blue colour, I can be said to be in relation to it in a peculiar way, the way of knowing or being aware of the patch of colour. Moore's contribution was to draw attention to the unique nature of this fundamental function of mind.

Briefly, then, Moore's contentions are : (a) Esse is percipi must assert a synthetic necessary connection between esse and percipi if it is to be significant. As such the proposition does not appear to be self-evident. (b) Sensation is analysable into *consciousness* and *object*. The relation between these two is the unique and simple relation of knowing or awareness.

The precise significance of this point of Moore's is well brought out by contrasting the thesis of realism with other theories. According to idealists knowledge is really *creation* : the knowing mind to a greater or lesser degree *creates* the object of knowledge. For Bergson to know a thing means to be in sympathy or empathy with it, or in less guarded language to be *one* with it. This is his famous doctrine of intuition. Pragmatists maintain that knowing is a convenient adjustment between the individual and the environment which helps him to get along. Realism denies all these contentions. The realist maintains that *knowing* and *creating* are two totally distinct mental functions ; that *knowing*

is not the relation of *identity* as Bergson and the mystics would have us believe, in fact the distinction between knower and known is fundamental in any process of knowing. And finally, against the pragmatist he would contend that adjustment to environment does not constitute knowledge any more than a robot's successful response to a particular stimulus tends to show that the robot is capable of knowledge. What then is the realist's thesis ? It is this : That knowing is a process of *discovery* in which the nature of the object is directly revealed to the knowing mind. . It is this fundamental point which is brought out in Moore's analysis.

So far we have merely given the grounds for believing that realism is possible. The task of the realist, however, is by no means over, for he must now show in detail *what* it is that we are directly aware of in perception and how the belief in the existence of objects can be based on our perceptual experience.

There is considerable room for difference of opinion on these points and the problems raised are by no means easy. The major difficulty, and a difficulty which must be met by any plausible theory of perception is that of error. Our perceptions are quite as often erroneous as not, and no theory can be considered successful unless it can account for both true and false perceptions. Thus a theory on which there cannot be perceptual error— and subjective idealism is one such theory—must be rejected as false. It must be confessed that realists have not succeeded in finding a satisfactory solution to the problem. Most of the theories of modern realism are extremely complicated and difficult, but the early views of Bertrand Russell which we shall now sketch are on the whole both simple and representative of present-day trends.

Russell approaches the problem of perception by way of his distinction between knowledge by acquain-

tance and knowledge by description which we outlined in our second chapter. All knowledge by description we then pointed out, rests on acquaintance which is also the most certain type of knowledge we have. This being so, we can now understand the significance of the question Russell asks : *what* is it with which we have acquaintance in acts of perception ? Commonsense believes that we are directly acquainted not only with such things as tables and chairs but also with the minds of the people we meet and talk to. A little reflection however, shows that this belief is false. I do not really see the table I am writing at ; all I am directly aware of is a brown rectangular patch of colour which we call the surface of the top. From this immediate datum I infer the rest of the table, its legs, the underneath surface of the top, and all the other parts of which the table is composed. This inference is made in conformity with past experience. At some time or other I have directly examined all the parts and seen how they are related with one another. Thus, when I see a brown rectangular surface, I unconsciously fill in the gaps and say in the ordinary commonsense way : I am seeing a table.

This analysis has made one thing clear : I do not have direct acquaintance with such things as tables and chairs, which we will now refer to as objects. What we are directly aware of are things like patches of colour when I look at an object, a certain hardness when I touch it, a certain sound when I knock it with a stick. These patches of colour, hardnesses, raps of sound are called sense-data, and it is sense-data with which we are *acquainted* in perception.

So much of Russell's contention, that direct knowledge is only of sense-data, has been largely accepted by present-day realists. But the really difficult and controversial problem has been the relation of sense-data to objects, and on this question Russell himself

has taken different views as his thought has progressed. These changes of view in Russell's theory of perception, may, however, well be considered as a development regulated by a stricter and more careful use of the principle of Occam's Razor. In other words, each new theory produced by Russell is an improvement on the earlier one in the sense that it is logically more simple or provides an explanation of perceptual knowledge in terms of a smaller number of ultimate and indefinable concepts.

In the *Problems of Philosophy* first published in 1912, Russell recognised the existence of both sense-data and objects. Sense-data he maintained are *signs* of objects. Colour, shape, hardness and so on are the appearances of objects which exist independently of knowing minds. But beyond this it is difficult to find any coherent view of the relation between sense-data and objects in the *Problems*. On page 17, Russell writes : "We cannot say that the table is the sense-data or even that the sense-data are directly properties of the table". His grounds for this negative statement are the variability of sense-data—the fact that the table appears to have different shapes, sizes and colours under varying conditions. A few pages later he seems to accept the commonsense view that objects have qualities *like* or corresponding to the sense-data we are aware of.[1] Yet in another place we find him apparently agreeing with the physicists, that objects may not be quite as they appear in perception—that the colour red may not be what it looks like but waves of a certain frequency. And finally Russell also contends that objects are the *cause* of sense-data.[2]

Whatever the merits or demerits of the position outlined in the *Problems of Philosophy*, one thing was abundantly clear ; that belief in the existence of objects

1 *Problems of Philosophy*, pp. 35-36.
2 *Ibid.*, Chapters II and III. f

was necessarily a shaky belief, being at best an inference, and a doubtful one at that, from sense-data. Russell's view seemed to be similar in several respects to that hopeless compromise, *viz.*, Locke's Representative Theory. Russell, therefore, in his next book *Our Knowledge of the External World*, took a courageous step forward and dispensed with the object. The table, to continue our example, is not out there in the external world, it is as he puts it, a mere *logical construction*.

Let us describe the act of perceiving a table, according to the theory put forward by Russell in this work. First of all we must explain two new terms which he employs. Russell draws attention to the fact that every individual perceives an object from a particular point of view and that no two persons can look at an object from the same point of view. This special point of view Russell calls a *perspective*. Your perspective depends not only on your position in space, but also on the moment of time at which you perceive the object. Thus two persons who look at an object from the same place but successively, would be said to occupy *different* perspectives. Every perspective yields a slightly different view of the object. For example, the view you get of the table if you look at it from above will be different from the view you have of it from the side. Each of these different *views* Russell calls an *aspect*. And just as every perspective is different from every other, so also with aspects. No two *aspects* are identical ; at best they can be very much like each other.

What happens when I say I am perceiving a table is like this. From my particular perspective, I perceive certain sense-data having certain relations with other sense-data. These constitute my aspect. But *the* table of the commonsense world is not really there. A different person occupying a different perspective would not, as is commonly assumed, see a different aspect of

the same table even though our aspects would have certain features in common. *The table* Russell would say, is the sum total of all the features presented in all possible perspectives. What we call *the table* is only a working hypothesis.

A careful reader of this and the preceding chapter can easily see that Russell's theory is far from satisfactory. Starting from a realistic position he has given us an analysis of perception which leads to a theory that is essentially subjective. And subjectivism as Santayana has well said, is eternally wedded to solipsism.

Here then we must end our brief survey of the problem of perception. The realistic analysis of perception we have contended, is correct in essentials. For it is realism alone which can give significance to the activity of *knowing* or help us in dealing with the facts of our daily experience.

KNOWLEDGE AND CERTAINTY

Our dependence on the mechanical devices of the day may have inspired in us some sort of vague respect for applied science, but it certainly has not impressed upon our minds the value of research in the more abstract spheres of knowledge on which, ultimately, all applications of science must be based. The practical man continues to look upon theory with indifference or contempt, completely oblivious of the extent to which success in action depends on a sound theoretical basis. And yet the simplest of actions imply belief in propositions which would be dismissed as theoretical and therefore unimportant from the practical point of view. On the tennis court the player now entices his opponent to the net with a drop shot, endeavouring to flick back the oncoming ball with the merest touch and now he brings his racket crashing down to effect a smash. What else is he working on but the law of physics, which he has learnt through past experience, that action and reaction are equal and opposite. The housewife who leavens her bread with yeast, and even the child who learns to avoid the fire are all acting on the basis of more or less simple laws of science which they believe to be true for all time. Considering this it is indeed strange that man who is capable of self-conscious reflection, should be generally indifferent to the question as to how we can establish the truth of scientific propositions and what are the grounds for believing them to be true. Whil· the problem of discovering and proving the laws which govern the universe is the task of the several science; each carrying on investigations in its

special field, scientific laws in general present a common difficulty which is a problem for philosophy. It is this problem which we must endeavour to explain and answer in this chapter.

The aim not only of physical science but also of mathematics is to establish laws or certain elementary universal propositions regarding their respective subject matter. A universal proposition is one which asserts a connection between its subject and predicate terms, not in one or a number of particular instances, but in all instances. It says, for example, that all men are mortal, that mortality is a characteristic not only of all the men who have lived so far, who we know from experience to have been mortal, but that any man whenever he may exist will be mortal. In the same way the mathematical proposition that two and two make four is true and will be true of any two groups of two. In other words, the laws of science and the propositions of mathematics claim to be true not only of past experience but also of all instances which may be experienced in the *future*. They claim to predict the course of future experience; every man you pass in the street will die some day, every two groups of two will form four individuals, fire will always burn and water quench thirst, as they have been found to do in the past. And this obviously raises a problem which is common to all the sciences, the physical and mathematical. Is this claim of science to formulate universal propositions justified? What are the grounds on which this claim is based? Are they reasonable? These are the questions which we must now attempt to answer, in the light of the views of the great philosophers of modern times. You must remember that in this case, as in all others, the first formulation of the question is necessarily vague and the answer inevitably confused. But as has been said, the history of philosophy is its own criticism. Later philosophers criticise the answers provided by

their predecessors and through this means come to a clearer appreciation of the problem itself.

The history of this problem, as that of several others, dates back to the Frenchman, Réné Descartes(1596-1650) with whom the break from mediaeval to modern philosophy is said to begin. Descartes came from a noble family,had travelled widely and fought in the ThirtyYears' War. He studied at Paris where he acquired a thorough mastery of the science and philosophy of the time. His contributions to knowledge, apart from philosophy, include the discovery of the binomial theorem, the application of algebra to geometry and the laws of the refraction of light. He was also the first person to attempt to explain the behaviour of the animal soul in mechanistic terms. But for all this he was a timid and cautious man, ever ready to submit his views to the correction of theologians and few would ever have thought that his works would be placed on the Index soon after his death.

Descartes was impressed with the certainty of mathematics. Geometry, for instance, was a well-established and solid body of knowledge, its axioms were universally acknowledged and the propositions of Euclid could be seen to follow from these fundamental truths. Philosophy, on the other hand, presented a sorry contrast. As Descartes felt, there was not a single matter within its sphere which was not under dispute and above doubt. His ambition was to place philosophy on as firm a footing as mathematics by importing into this study the methods of mathematics. In other words, he said we must start our philosophising with *absolutely* certain premises and build step by step on them as in geometry.

His question was to find the first absolutely certain premise of his system. To do this Descartes invented his method of doubt ; he would doubt everything which

it was possible to doubt. There were the impressions of the outside world gained through his senses but these could be doubted since the senses often deceive us. There were the truths of mathematics and logic arrived at by Reason—these also could be denied since Reason itself might have been planted in us by the devil in order to deceive us. But having got so far, Descartes argued, he could not doubt that he was doubting; this fact was proved in its very denial. He could not doubt or deny that he existed because this act itself implied that he was engaged in a particular kind of mental activity, namely, doubting. Here then was Descartes' first undeniable premise which he expressed in his famous phrase, "cogito ergo sum"—"I think, therefore I am." Having arrived at one indubitable truth he went on to expound another. Any other proposition, he said, which is clear and distinct as the "cogito," is also true. How Descartes went on to arrive at other truths and to rebuild on what he considered a firm basis the world his doubting had destroyed, it is not for us to detail here. Our special concern is this second preposition, known as the doctrine of *Innate Ideas* which we must now examine.

What exactly did Descartes mean by saying that a proposition is true if it is clear and distinct? To understand this we must know the precise sense of the words *clear* and *distinct*. By clear is meant clear to intuition, or self-evident. A proposition may be said to be clear if its truth is self-evident, as for instance, the proposition, 'a straight line is the shortest possible distance between two points'. A proposition is *distinct* according to Descartes' usage, if its truth cannot be proved by any other proposition. This means that all ultimately simple propositions are distinct and distinctness is a peculiar characteristic of such propositions.

It is evident from what we have said that *clear* and *distinct* are two aspects of but a single fact. And that

is that the truth of simple propositions cannot be proved. From the psychological point of view the test of the truth of such a proposition—if this can be called a test—must lie in self-evidence, that is, the proposition must be clear. From the logical point of view, it must be recognised that simple propositions are distinct, that they cannot be inferred from other propositions.

Before going any further there is a verbal confusion which must be straightened out. Descartes and his successors speak of the doctrine of *Innate Ideas,* while we have explained it as a criterion for judging the truth or falsity of *propositions.* The fact is that the word *idea* is one which has been used in a highly ambiguous way in the history of philosophy. Descartes tells us in his Third Meditation that properly speaking the word *idea* should only be used to denote images. The sense in which he uses it when he speaks of *innate ideas* is, however, different. He writes: "Now in respect to ideas, if these are considered only in themselves and not referred to any object beyond them, they cannot properly speaking be false; for whether I imagine a goat or a chimera, it is not less true that I imagine the one than the other.Nor need we fear that falsity may exist in the will or affections; for although I may desire objects which are wrong, and even that never existed, it is still true that I desire them. There thus remain only our judgments, in which we must take diligent heed that we be not deceived." In other words, it is only in judgments, propositions in our terminology, which refer (affirm) ideas to subjects, that the question of truth or falsity arises. The theory of innate' ideas, then, Descartes clearly recognizes, is a theory about the truth or falsity of certain types of judgments or propositions, it has nothing to do with *ideas.* It is unfortunate that Descartes and his successors should have continued to use the word *idea* which makes for nothing but confusion.

The doctrine of innate ideas, then, provides a criterion by which we may test the truth or falsity of universal propositions. It will be noticed that both aspects of the criterion, clearness and distinctness, are what may be described as internal in nature. To test the truth of a proposition, Descartes says, it is necessary only to examine the proposition itself. According to him no reference need be made to some external reality. In other words, it is not necessary when attempting to determine the truth of a proposition to refer to the external world and to attempt to prove the validity of the proposition by means of experience. For instance, Descartes would contend, that the proposition that two sides of a triangle are greater than the third is known to be true, if it is clear and distinct or is shown to follow from some proposition which is. The proposition may be said to be independent of experience, in the sense that although it will be true of facts in the external world, experience will not be necessary to prove its validity. It is this characteristic which is denoted by the term *innate*. Modern philosophers prefer the term *a priori* which they oppose to *a posteriori*. A proposition is *a priori* if it can be shown to be true independently of experience; it is *a posteriori* or empirical if it cannot be shown to be true without reference to experience.

But to come back to Descartes. Descartes believed that just as you could have a mathematics which was innate or *a priori* and therefore certain, in the same way an *a priori* physics was possible. Metaphysics would always remain a body of disputed opinions unless it was placed on an *a priori* basis, and Descartes himself attempted to expound such a system.

Descartes was followed by several philosophers who accepted his theory that it was possible to arrive at a speculative metaphysic on *a priori* grounds. These philosophers, the most notable of whom lived in Europe.

came to be known as the Rationalists. The justification for this title is that they claimed to give us a metaphysics based on *Reason* as opposed to *Experience*.

Benedict de Spinoza (1632-1677) who is generally regarded as next in the line of distinguished rationalist philosophers, did not contribute anything to the doctrine of *innate ideas,* though he applied it more rigorously in the development of his system which is expounded in geometrical form starting with certain definitions which are *a priori*. Several important implications of the doctrine were, however, brought out by his successor Leibniz.

Leibniz, who had a great capacity for abstract thinking, saw that it was very important to have definite ideas about the nature of propositions in general, and most of his metaphysical beliefs are derived from his ideas on the proposition.

In the first place, Leibniz believed that every proposition is of the subject-predicate form. Every proposition, he maintains, ascribes a predicate to a subject or is ultimately reducible to a proposition of this type. The important point about this doctrine is that it denies the existence of relational propositions, propositions such as *A is greater than B, A is to the left of B,* in which B is not asserted to be a predicate or quality of A. He maintained that all such propositions are reducible to subject-predicate form and the facts described by such propositions, namely, relational facts, do not really exist and are mental fictions. Leibniz's thesis on this question, is fundamental to all forms of absolutism, though not all absolutists have had the acumen to see it. While we believe that Leibniz's doctrine can be shown to be false, the question is not directly relevant to our problem and we must therefore restrain ourselves from getting involved in it.[1]

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1 Cf. Russell *The Philosophy of Leibniz*, 2nd Edition, pp. 12-15 and O; *Knowledge of the External World*, pp. 54-58.

But not only does Leibniz hold that every proposition is of the subject-predicate form he also contends that all propositions except those which assert existence, are analytical. Let me first explain this new term. A proposition is analytical if the predicate term merely expresses or restates what is already contained in the notion of the subject. Thus, for instance, when you say a cocker spaniel is a dog, the proposition is analytical since the characteristic of being a dog, is part of what is meant by the term *cocker spaniel*. Opposed to the term analytical, is *synthetic*. A proposition is synthetic if the predicate is not part of the definition of the subject. To continue our example, *this cocker spaniel is black* is a synthetic proposition as *black* is not part of what is *meant* by cocker spaniel, cockers being also golden, brown and several other colours.

It was a dogma with all rationalists, though Leibniz was perhaps the first man to make it explicit, that only *analytical* propositions are *necesssary.* Leibniz does not conceive of any other alternative, in fact he does not distinguish analytic from necessary and only employs the latter term. Thus for him, necessary propositions are those which are analytical; all synthetic propositions are prejudged to be not necessary or contingent.

A word is required to explain why analytical propositions are considered necessary. This necessity is said to depend on the law of non-contradiction. An analytical proposition is necessarily true because its opposite involves a contradiction. Thus it would be argued,the proposition *a cocker spaniel is a dog* is necessarily true, because its opposite *a cocker spaniel is not a dog* would be self-contradictory since dog is part of what is *meant* by the subject-term *cocker spaniel.*

But let us return to the doctrine of innate ideas after this somewhat long and difficultexcursion into the nature of propositions. According to Leibniz innate ideas consist

of analytical propositions, which are necessary since their opposites lead to self-contradiction. But these innate ideas or *eternal truths* as Leibniz prefers to call them, refer only to the relations of ideas or concepts. Take mathematics, for instance, the laws of which Leibniz considered to be analytic. When we say that the square on the hypotenuse is equal to the sum of the squares on the other two sides of a right-angled triangle, this is not a law about triangles which actually exist in the universe. The law would not apply accurately to most actual triangles since it is probable that the sides of these triangles are not quite straight. What is more, the law would be true even if there were no triangles in the universe at all. The law merely expresses the relations which in a right-angled triangle—a certain concept—the hypotenuse has to certain other concepts, the other two sides. What it asserts, in other words is, if there is a right-angled triangle, then the square on the hypotenuse, etc; it says nothing about the relations of actual existents. This then is an important limitation which Leibniz recognizes about the range of innate ideas or eternal truths; their necessity has been established at the cost of their applicability. So far as propositions which speak of the relations between existing substances or things are concerned these are all considered by Leibniz to be synthetic and therefore contingent.

It would be useful at this point to sum up the main contentions of the theory of innate ideas. The theory asserts:

(a) only those universal propositions are necessary which are innate or *a priori*, that is not based on experience.

(b) These propositions are analytic.

(c) These propositions are confined to those which assert relations between ideas, they do not speak of relations between existents.

The main critics of the doctrine of innate ideas were the British philosophers Locke and Hume. Locke

who lived from 1632 to 1704 was educated at Oxford, where scholasticism still survived and against which he reacted with all the force of his solid common sense. To his robust and somewhat untidy mind, scholasticism seemed perplexed with obscure terms and useless questions, a wrangle and an ostentation rather than a real effort to discover truth. Locke has been described as the founder of British empiricism and while this description may be correct in general, earlier expositors have tended to ignore the many respects in which his conclusions come very near to those of his continental opponents.[1] His main work the *Essay Concerning Human Understanding* sets out to determine the origin and extent of our knowledge.

Locke draws a sharp distinction between knowledge and opinion and his ideas of what constitutes knowledge are as rigid and strict as any rationalist would like. Knowledge, says Locke, must have the following characteristics. It must be *certain, universal, instructive* and *real*. What exactly does he mean by these terms ? The first characteristic is obvious and requires no explanation. By insisting that knowledge must be *universal* he is merely pointing out that he will consider that strictly only universal propositions constitute knowledge—particular propositions do not give knowledge in the scientific sense. By *instructive* he means that propositions which pretend to give us knowledge must really do so, they must not be tautologous or analytic, propositions which repeat in the predicate what has already been asserted in the subject. Lastly, all knowledge strictly so called must be about the real world.

What then becomes of the rationalists' theory of innate ideas when examined in the light of these criteria. Before going into this question we must notice a parti-

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1 The interpretation of Locke's views given here is based on Gibson's sch)larly volume entitled *Locke's Theory of Knowledge*.

cular criticism of this doctrine by Locke which has been given undue importance in the history of philosophy. The supporters of the doctrine of innate ideas believed that the self-evident, simple propositions which constituted the innate ideas were planted in the mind by God and in fact that their certainty and simplicity resulted from their supernatural origin. This may be called the psychological aspect of the doctrine and the first book of Locke's Essay was devoted to a thorough refutation of it. In this connection Locke enunciated his great principle that all knowledge is derived from experience, that at birth the mind is a blank slate or as he called it, a 'tabula rasa.' The validity of Locke's contention is at any rate now generally admitted and it is doubtful whether the doctrine of innate ideas, in the psychological sense, was ever held by Descartes and his continental followers. While Locke's polemic rightly emphasised that all knowledge must be won in the normal way by the mind, which is liable to error, the important point to note is that there is no connection between the psychological and the logical aspects of the doctrine. It is true that all knowledge is empirical in the sense that it originates in or is suggested by experience but it does not follow therefore that experience can establish the truth of all knowledge. The question of the origin of knowledge is a problem for psychology and the answer is in no way relevant to the logical problem : what guarantee is there of the truth of knowledge.

While Locke's polemic against innate ideas leaves the logical aspect of the problem untouched, he has a good deal to say which is very relevant to the subject. In the first place he distinguishes between what he calls trifling and instructive propositions—the distinction between analytic and synthetic. He agrees with Leibniz that analytic propositions are universal and necessary but he points out that they are quite useless since they do not add to our knowledge. At the same time, he

agrees with Leibniz that all propositions asserting existence or connections between existing substances are synthetic, dependent on experience and therefore not necessary. But he disagrees with Leibniz on two important points. In the first place, he does not regard all mathematical propositions as analytic. Some, for instance, the Pythagorean theorem in Euclid, he regarded as synthetic, while others he thought were analytic. In the second place, he believed that those mathematical propositions which were synthetic were *a priori* and necessary. This latter conclusion anticipated one of the revolutionary innovations of Kant because it cut across an assumption which was held in common not only by the rationalists but also by Hume, the assumption by which they equated necessary with analytic propositions and synthetic with those which are empirical and therefore contingent. Unfortunately Locke did not appreciate the importance and significance of the truth he had stumbled upon.

By Locke's time the distinction between the mathematical and physical sciences seemed to be pretty well established—it was more or less commonly accepted that the former are analytic and certain; while the position of the latter was somewhat nebulous it was agreed that they were not on a par with the former. In the main Hume agrees with the accepted interpretation of the mathematical sciences; his main contribution, however, is a clarification of the grounds or lack of grounds, for certainty in the physical sciences. And it is to this subject that we must turn in the next section of this chapter.

Both Descartes and Leibniz had maintained that among the several principles which are innate is the principle that every event must have a cause. Leibniz had called this the principle of Sufficient Reason, the principle which governed the relations between actual

substances, as the eternal truths governed the relations between ideas. The law of Sufficient Reason, he pointed out, made the physical sciences possible by insisting that anything is what it is because it is determined to be so and not otherwise by some cause. This is nothing else but the assertion that the physical universe exhibits order or works according to law. Further, Leibniz held that while the law of Sufficient Reason was itself an eternal truth or was innate the particular laws of say, physics or chemistry, were empirical. Substantially this was the position of Locke also.

Neither Leibniz nor Locke had made it at all clear what they meant by cause. Broadly speaking, they conceived of cause as an active agent which brought about changes in another which was passive and these changes were the effect. The idea of cause as an active agent was derived from the will of which we are supposed to have direct knowledge in introspection. This was the general view of causation which was held by philosophers before David Hume arrived on the scene. For convenience we shall call this the *Activity View* of causation. More or less implicit in this theory was, however, another conception of causation which is required by science. According to this, cause is not necessarily conceived of as an active agent, but what is emphasized is a uniform relation between cause and effect, the relation of, same cause, same effect, or more accurately, similar cause similar effect. It will be clear that if the universe is to exhibit order, then what is required is not that there should be a cause for every event but that a particular kind of effect should always follow a similar cause. We shall call this the *Uniformity View* of causation. Both Leibniz and Locke saw that some sort of law of causation was necessary for science but neither was able to formulate it with any accuracy and both it would appear, were misled by thinking of cause on the analogy of will. To Hume belongs the credit of providing a definition of

cause which has become the basis of discussion for all subsequent thinkers however much they might disagree with him.

Hume mentions five characteristics which define the causal relation. Firstly, the cause always *precedes* the effect. Secondly, cause and effect are *contiguous*. Thirdly, there is in his words *a constant conjunction* between cause and effect. Fourthly, there is the supposed *necessary connection* between the two such that if the former occurs, the latter must occur and finally there is the *force* or *power* which the cause is said to possess by virtue of which it can *produce* the effect.

The first two characteristics are not very important and need not detain us. There remains, therefore, *constant conjunction, necessary connection* and *force* or *power*. So far as the last characteristic is concerned, Hume contends that in fact these terms are quite meaningless and that all that could possibly be meant by them is the characteristic of *necessity*. To prove the point that this supposed idea of *force* or *power* is empty or meaningless he attempts to show that we never experience any such thing when we observe cases of cause and effect either in the external world or within ourselves. When a moving billiard ball strikes another and sets it in motion, Hume points out that we observe the moving ball, the collision and the movement of the other. The *force* which the former is said to exercise over the latter we never observe. In his *Inquiry Conecerning Human Understanding*, Hume attempts to argue at great length, and it would seem quite irrelevantly, that introspection also does not and cannot yield any impression which conforms to the mysterious idea of force or power. Be that as it may, it remains a fact that if power or force is not observed to characterize causal relations in the external world, the characteristic cannot be one of the qualities which *define* the causal relation.

And since our immediate purpose is to attempt to arrive at some sort of rough definition of this relation we may ignore this characteristic.

We are then left with *constant conjunction* and *necessary connection*. By constant conjunction Hume means simply that whenever we observe the cause we also observe the effect; the latter *invariably* follows the former. But he adds, while constant conjunction characterizes the causal relation, yet it is also found to hold in cases which we would never describe as instances of causation. Night and day invariably follow each other, but we would not for that reason call one the cause of the other. The quality then which is supposed to be common and peculiar to all instances of cause and effect is that of necessary connection.

Hume's next question, therefore, is to enquire into the grounds on which we believe that cause and effect are necessarily related. His first contention is that the relation between cause and effect is synthetic, not analytic as his predecessors had believed. To prove this he endeavours to show that to assert the cause and to deny the effect or *vice versa* is not *self-contradictory*. It was contended that the idea of a cause follows analytically from the idea of something beginning in time, and therefore, if you ever assert that say X comes into existence, it implies an earlier event which precedes it and is the cause of X. When you say X came into existence at a particular time, then you are also saying , *as part of this assertion,* that X must have a cause. But Hume points out that this latter assertion is quite separate and distinguishable from the former. The two statements, X *came into existence at a particular time,* and X *must have a cause* he contends, are quite distinct from each other and the latter is certainly *not contained in the former*; it is emphatically not part of the meaning of the former. Any connection between the two must, therefore, be synthetic. Hume

also shows how another argument for the contrary view, which pretends to establish that the denial of the law leads to self-contradiction, is absurd. It is contended that if you deny that everything must have a cause you are really taking the view that *nothing* can be the cause of something. But this, Hume points out, is merely to deny the law of causation verbally and in fact to assume it all the time. For if you were consistent in your denial what you would say is not that X is caused by nothing but that X does not require a cause to come into being. And this statement is obviously not self-contradictory, though it may be false. Hume believed that the law of causation then is synthetic and as such could only be established through experience. He, therefore, enquired as to whether experience can furnish us with any grounds for believing that there is a necessary connection between cause and effect which the law asserts. But can experience furnish us with any grounds for believing that the effect necessarily follows the cause ? Hume points out that *past* experience cannot provide any such reason. The fact that X and Y have invariably followed each other in the past is no reason for supposing that this will happen in the future. And every fresh instance when observed will itself become part of past experience and will not, therefore, be a ground for believing in the necessary connection between cause and effect in the *future*. If past experience is to provide any ground for such an inference, Hume points out, we require another principle which has been called the Principle of the Uniformity of Nature. This is the assertion that nature will continue to function in the future as it has in the past. And this principle also, Hume shows, cannot be proved by experience. But we are anticipating. The problem as to how we can generalise on the basis of past experience is a question to which we shall address ourselves in the next chapter.

Hume's conclusion then is that we have no rational ground for believing that every event must have a cause or that there is any necessary connection between cause and effect. The wider implication of this conclusion was to throw doubt on the physical sciences as a whole. Their claim to theoretical certainty was undermined by Hume's argument. All that they could furnish us with were laws which we might use for practical purposes since nature demands that we should live and act.

If we take stock of the situation at this stage in the history of our problem, we find that philosophical criticism has reached a dead end. The mathematical sciences can claim certainty for their conclusions, but as Locke has pointed out, these propositions being analytic, are not instructive and may even be described as mere tautologies. On the other hand, the physical sciences which are synthetic, do advance our knowledge but the laws which they formulate can have no certainty. Obviously, if the claims of science were to be defended an entirely new approach was necessary.

For a revolution of this kind Europe had to wait till the publication of Kant's *Critique of Pure Reason* in 1781, five years after the death of Hume and forty-two years after his *Treatise of Human Nature* had shown the limitations of Rationalism and had exposed the bankruptcy of Empiricism to fill the void. The innovations which we owe to Kant are numerous and *important*.

(i) In the first place, the distinction between analytic and synthetic which we have referred to in this chapter was clearly seen and brought out originally by Kant. His predecessors had not distinguished this pair of terms from the conception of what is *a priori* and what empirical. Thus for them the possibility that any proposition which was *a priori* should be anything but analytic did not exist.

(ii) In the second place, not only did Kant differentiate between the two pairs of terms referred to above, he was the first philosopher to realise that there are synthetic propositions which are *a priori*. In fact his main problem was to show how a proposition or rather how certain classes of propositions, namely, those of mathematics and physics, could be both *synthetic* and *a priori*.

(iii) Thirdly, Kant differed from his predecessors in believing that mathematics was synthetic and not analytic—a point on which both rationalists and empiricists had been in agreement.

(iv) Fourthly, though in this respect he followed Hume, Kant believed that the causal principle was synthetic. He did not, however, concur in Hume's conclusion that the principle was, therefore, empirical and contingent.

We must discuss briefly the second and third points stated above, enough has already been said on the distinction between analytic and synthetic propositions. The respects in which Kant differed from Hume on (iv) will be covered when we consider (ii).

Let us first start with (iii) Kant's contention that the propositions of mathematics are synthetic. He takes one example each from arithmetic and geometry and shows that the predicate of the propositions cannot be derived through an analysis of the subject but that a fresh intuition is required to see the connection between the two terms. This is what he says :

"We might, indeed, at first suppose that the proposition $7+5=12$ is a merely analytic proposition, and follows by the principle of contradiction from the concept of a sum of 7 and 5. But if we look more closely we find that the concept of the sum of 7 and 5 contains nothing save the union of the two numbers into one, and in this no thought is being taken as to what that

single number may be which combines both. The concept of 12 is by no means already thought in merely thinking this union of 7 and 5 ; and I may analyse my concept of such a possible sum as long as I please, still I shall never find the 12 in it.   We have to go outside these concepts, and call in the aid of the intuition which corresponds to one of them, our five fingers, for instance, or as Segner does in his Arithmetic, five points, adding to the concept of 7, unit by unit, the five given in intuition. For starting with the number 7, and for the concept of five calling in the aid of the fingers of my hand as intuition, I now add one by one to the number 7 the units which I previously took together to form the number 5, and with the aid of that figure (the hand) see the number 12, come into being.   That 5 should be added to 7, I have indeed already thought in the concept of a sum = 7 + 5, but not that this sum is equivalent to the number 12.   Arithmetical propositions are, therefore, always synthetic.   This is still more evident if we take larger numbers.   For it is then obvious that however we might turn and twist our concepts, we could never, by the mere analysis of them, and without the aid of intuition, discover what [the number is that] is the sum.

"Just as little is any fundamental proposition of pure geometry analytic.   That the straight line between two points is the shortest, is a synthetic proposition.   For my concept of straight contains nothing of quantity, but only of quality.   The concept of the shortest is wholly an addition, and cannot be derived through any process of analysis, from the concept of the straight line.   Intuition therefore must be called in ; only by its aid is the synthesis possible."[1]

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1 N.K. Smith, *Kant's Critique af Pure Reason*, Abridged Edition, pp. 33-34

Assuming then that Kant is right in his belief that the propositions of mathematics are synthetic he is still required to show that our knowledge of them and of the propositions of physics is *a priori*. For, unless this is proved our knowledge will still be lacking in certainty. When he comes to this point Kant takes a complete somersault which has been described as a Copernican Revolution. Instead of trying to prove that mathematics and physics give us knowledge which is *a priori*—that is necessary and certain—he merely declares that they do, and then sets out to devise a theory of knowledge on which an *a priori* mathematics and physics must be true. This method of arguing backwards from the conclusion to the premises which it requires, in order to prove the truth of the premises has, since Kant's day been called the *Critical Method*.

What, then, is this theory of knowledge which enables us to avoid the scepticism of empiricism and the emptiness of rationalism, the theory which makes synthetic *a priori* knowledge possible ? Briefly put the theory propounded by Kant is as follows : Knowledge, he says, arises out of a marriage of two elements—an empirical element or something which is given or exists independently of the knowing mind, and an *a priori* element or something which is contributed or imposed on the sensuous material by the mind itself. In knowing, the mind is not entirely a passive recipient of external impressions—impressions have to be organised and arranged before we can have knowledge. As Kant puts it, the object of knowledge is not merely *sensed* it has also to be *thought*. For example, in order to know a lamp shade it is not only necessary that I should receive certain impressions of colour, shape, texture and so on. It is also necessary that these impressions are given a certain coherence and fitted into a certain general framewo k. The impressions must be ordered in space and time, I must relate them to certain other impressions,

for instance, those of the lamp. I must have some idea of the factors which brought the shade into being and in its turn what effects the shade will have etc., etc. In fact unless I know these things I shall not know that what I am looking at is a *lamp* shade. Now Kant contends that this framework of general ideas or categories, as he calls them, is supplied by the mind. In order for anything to become an object of knowledge it must fit into the moulds or forms of the understanding. It is the constitution of the mind itself which explains the *a priori* element in knowledge.

If you had a pair of blue spectacles permanently fixed on your nose, everything you looked at would be affected by the colour of the glasses. The blueness pervading your visual world would correspond to what Kant calls the *a priori* factors in knowledge. You would know even before you examined any particular object that it must appear blue or discoloured by blue— that would be made necessary in the very act of becoming aware of any object. The constitution of the understanding and the fact that it imposes its own stamp on the object of knowledge, then, explains why experience must necessarily conform to certain laws.

Kant's theory it would appear, however, raises more problems and difficulties than it solves. These are connected mainly with the thing-in-itself or the *given* element of which we cannot have any knowledge. The difficulty arises because although, on the one hand, Kant says we can only know the phenomenal object—the object as experienced—yet at the same time he is led into making all kinds of assertions about the thing-in-itself. To start with of course is the very fact of its existence and then that the thing-in-itself is the *cause* of sensation or constitutes the *given* element in knowledge. The most serious difficulty as we see it occurs, in the case of the human mind itself. Kant tells us several important things about it—that it is active, that it is characterized

by the categories and the forms of intuition which it imposes on the material of sense. In fact it would appear that Kant is faced with a most awkward dilemma. Either the human mind must be regarded as a 'thing-in-itself' in which case Kant contradicts himself when he claims to describe its constitution. Or else, the mind and its categories must be regarded as phenomena in which case it cannot provide any explanation for the *a priori* elements in other phenomena.

But apart from these difficulties which concern Kant's philosophy as a whole, there are other criticisms connected with our special problem. It would appear that Kant's justification for believing that synthetic propositions can be *a priori* does not apply to all cases of a priori knowledge. There are several synthetic *a priori* judgments which are not accounted for on his theory. A good instance has been cited by Dr. A. C. Ewing in his *Commentary on Kant's Critique of Pure Reason*. Ewing distinguishes between two senses of the word analytic. He points out that it can mean (a) a proposition which gives no new information and (b) a proposition which cannot be denied without self-contradiction. The rationalists believed that a proposition would be analytic in sense (b) without also being analytic in sense (a) while Kant contended that if a proposition was analytic in sense (b) it must also necessarily be analytic in the former sense. Ewing's point is that the assertion that 'any proposition which is analytic in sense (b) must be analytic in sense (a)' is itself an *a priori* synthetic proposition. The validity of this proposition, and of several others, is not accounted for on Kant's own theory.

This chapter has been difficult and complicated and we shall find that there are but few conclusions that we can draw with certainty or on which there is any general agreement among philosophers today. The conclusions we have reached may be summed up as follows :

(i) There is a valid distinction between the mathematical and physical sciences; the claim of the former group to give us necessary and certain knowledge is far more readily admissible than that of the latter group.

(ii) So far as the mathematical sciences are concerned there is still no general agreement as to whether they are analytic or synthetic. Bertrand Russell, for instance, who is one of the foremost thinkers on mathematical philosophy held that mathematics was synthetic during his early days but has now been won over to the contrary view by Wittgenstein who maintains that all mathematical propositions are tautologies. It would appear in part at least that these differences arise from a lack of precision in defining analytic and synthetic propositions. In the definition that the predicate of an analytic proposition is contained in the notion of the subject term, the phrase *contained in* is ambiguous. We must be clear as to exactly what the phrase means and also whether there is any sense in maintaining that a certain subject X which has the quality P might have existed without this quality.

(iii) Generally speaking it is admitted now after Hume's analysis that the causal law is synthetic.

(iv) It is realised that one pre-requisite for the possibility of physical science is that the law of causation, *viz*., that there are certain uniformities of succession—is necessary.

(v) And finally, the question whether the law of causation is necessary and in fact whether any synthetic proposition can be said to be necessary raises the question, what do we mean by *necessity*. This is a fundamental question and it is somewhat surprising to find that hardly any philosopher has addressed himself explicitly to providing an answer to it. Nevertheless, on the basis of the present chapter we can rule out one definition of necessity as decidedly false. This is the definition, given

implicitly by the rationalists, that by *necessary* we mean a proposition the opposite of which is self-contradictory. This we find is also the definition of analytic propositions. Its acceptance, therefore, would prejudge the question whether synthetic propositions can be necessary. What is more it would reduce to a tautology the proposition that analytical propositions are necessary.

We find that in the end, apart from a few tentative and very general conclusions, the main legacy of the last chapter is some further difficult problems which must be solved before we can come anywhere near answering the question with which we began : Is the claim of the sciences to give us necessary and certain knowledge justified ? But we must not be disappointed at this lack of definite results. As Whitehead eloquently points out : "Philosophy begins in wonder. And at the end, when philosophic thought has done its best, the wonder remains. There have been added, however, some grasp of the immensity of things, some purification of emotion by understanding".

INDUCTION AND ITS PRESUPPOSITIONS

Knowledge, in the sense in which we have been using the term in the last chapter, is embodied in the universal propositions of the mathematical and natural sciences. In the natural sciences we saw that the establishment of universal propositions implies the existence of causality. We considered what may be meant by causality and the grounds for believing that there is any such thing as a necessary connection between events. But in addition to causal laws, the natural sciences also seek to establish what are called inductive generalizations. Induction is a process of inference from a certain number of observed instances to a general or universal conclusion. In a certain number of observed instances we have noticed that if a occurs, b also occurs ; no case has been observed in which a occurs but b does not occur, so we conclude that in all cases observed and unobserved, if a, then b. Examples of inductive generalizations are *all crows are black, all cloven-hoofed animals chew the cud* and so on.

We stated in the previous paragraph that the *natural* sciences seek to establish inductive generalizations. This remark requires qualification if we are to have clear ideas about induction. Induction is essentially a logical process ; whether it can give valid and useful results when applied to different fields of investigation is an entirely different question. Take the proposition $2+2=4$. As a proposition of mathematics it is true and it also happens to be useful to us in dealing with various types of practical problems. But this need not have been the case. Any two pairs of drops of liquid

do not form four drops when put together for the simple reason that they merge with one another. So with induction. It has been found more useful in the natural than in the mathematical sciences; but as a logical process it has no special connection with the natural sciences.

From the point of view of critical philosophy the questions which induction raises are :—(a) Is induction a valid process of reasoning ? Can it give us *knowledge* in the sense in which we have been using that term in the previous chapter ? (b) What reason is there to suppose that induction can give us true knowledge when applied to matters of fact ? Let us deal with each in turn.

The inductive process may be stated as follows : All observed S's have been P. ∴ All S's are P. Now it is obvious that a formal fallacy has been committed in this process. We have drawn a universal conclusion from a particular premise, which is clearly illogical. How then can induction be accepted as a valid form of reasoning ?

Most logicians have recognized this difficulty but no logician or philosopher till the present century seems to have seriously tackled the problem and sought to provide a reasonable solution. Before we get on to the views of present-day philosophers let us examine the Aristotelian position as expounded by W. H. B. Joseph in his well-known *Introduction to Logic*.

One of the grounds on which philosophers of the Renaissance, such as Bacon, had criticized Aristotle's logic as being sterile was his theory of induction. For Aristotle induction meant primarily *Induction by Complete Enumeration*. The universal conclusion, he had taught, could only be established if all the particulars had been observed. In symbolic form the inductive syllogism reads—

a, b, c......have been observed to be P.
a, b, c......are all the S.
∴ All S are P.

The argument is formally valid, but as Bacon argued it is an obvious instance of petitio principi and therefore no inference at all.

While admitting that Bacon's criticism is valid against Aristotle's doctrine of Induction by Complete Enumeration, Joseph maintains that this was not all that he had to say on the subject.   Science, Aristotle held, is concerned with kinds, and a natural kind may be roughly described as objects having a group of common properties which vary within narrow limits.   According to Aristotle the function of science is to determine the *essence* of a kind and to see the necessary connection between the essence and the other properties.   In mathematical science you start with a definition and proceed to demonstrate its connection with various properties, as in geometry.   In the natural sciences this order is reversed.   As Joseph says : "But the intellect does not perceive it (essence) at once ; experience of things of the kind is necessary before we can define the kind.   The use of these particulars is not to serve as a proof of a principle, but to reveal it".[1]   Thus for example, experience of particular instances is required before the intellect can see intuitively that qualities a, b, c constitute the essence of crow, and if crow, then black.

But as Joseph himself admits this is to make induction into a psychological process and not a logical one. In short, Aristotle has given us no satisfactory answer to our problem, he has merely side-tracked it.   And in defending his doctrine as a solution to the logical problem of induction, Joseph has helped to confuse the issue.

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1 . Joseph, *Introduction to Logic*, p. 385. II Edition.

We have dealt at some length with Joseph's views because they are well known and illustrate in an explicit manner the sort of confusion in which logicians have become involved in trying to provide an answer to the question : is induction a valid form of inference ? It is easy to see as Dr. Broad points out, that there is in fact no way of saving induction from a formal fallacy if the conclusion has to be stated in the form, all S is P. No additional major premise, whether about logic or nature can help. He says : "Whatever the supposed principle (major premise) may be and however it may be established, it cannot be stronger than an universal proposition. But if an universal proposition be added to our premise, All observed S's are P, the latter premise still remains particular as regards S. And from a universal and a particular premise, no universal conclusion can be drawn".[1]

Must we then reject induction altogether as invalid ? The answer is no. Induction can be saved if the conclusion is stated in terms of probability ; if the argument is of the form, on the observed data a high (or low) degree of probability attaches to the conclusion that *all crows are black*, and so on. In this case, as Dr. Broad puts it, "We argue from a certain proposition about some S's to the probability of a proposition about all S's. This is perfectly legitimate. The subject of our conclusion is no longer All S's, but is the complex predicate 'highly probable' with respect to the observed data."[2]

It will be clear from what has been said in the last paragraph that probability is not something which can be asserted of propositions in their own right. It is a relation which obtains between premises and conclu-

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1 *On the Relation between Induction & Probability* (Part I) *Mind*, Vol. XXVII, p. 390.

2 *Ibid.*, p. 391.

sion. We do sometimes for convenience speak of a conclusion being probable but this is because we do have implicit at the back of our minds the premises in relation to which the conclusion is declared to be probable.

This being the case, a judgment of probability does not cease to be true if it happens not to be validated by experience. Take, for instance, the throwing of a dice and getting a six. Past experience has shown that the dice is not loaded in favour of six. The probability of getting a six in the next throw is therefore $\frac{1}{6}$. And yet you might get sixes consecutively for the next half dozen throws. This would not show that the judgment of probability was false. Similarly in relation to premise S a certain probability may attach to a conclusion C. Subsequently further evidence may become available greatly increasing or diminishing the probability of the conclusion. But this would not show that it was unreasonable to expect C as probable *on the original evidence*. As Keynes points out, in dealing with the logical theory of induction it is essential to distinguish the rational from the true. "Induction tells us that on certain evidence, a certain conclusion is reasonable, not that it is true. If the sun does not rise tomorrow, if Queen Anne still lives, this will not prove that it was foolish or unreasonable of us to have believed the contrary".[1]

Looked at from the point of view of logical theory we see that induction can give us probable knowledge. But is there any such thing ? Is not the conception in fact self-contradictory ? We saw in the last chapter that philosophers from Plato downwards had always maintained that knowledge, to be worth the name, must be certain. Leibniz and Hume who may be said

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1 J. M. Keynes, *A Treatise on Probability*, p. 245.

to represent opposite poles of epistemological theory, nevertheless agreed on this point. The universal propositions of mathematics and natural science could not claim to represent knowledge unless we could be certain of their truth.

Partly, we must confess, the question is verbal. Anything which falls·short of certainty may be called probable *knowledge* if you like or mere opinion as it has been slightingly termed by metaphysicians of the past. On the other hand, philosophical usage must conform to the facts of experience. In ordinary life we distinguish between degrees of certainty which may attach to knowledge and we do claim to *know* things although we may not be certain of them. Consider the following cases in respect of each of which we may claim to have knowledge, though with varying degrees of certainty. 'The sun will rise tomorrow' ; 'there will be life on this planet for several thousand years to come' ; 'World-War III will break out within the next few years'. If our philosophy is to be adequate to the facts we must admit that (a) although none of them is certain, they do or may represent instances of *knowledge* ; (b) that they cannot all be equally lumped together as 'mere opinion' ; and (c) that each approximates in a varying degree to the ideal of certain knowledge.

We think it is clear that the sort of facts cited above can be explained if we agree that probable knowledge may nevertheless be genuine knowledge. What is more, acceptance of probable knowledge might clear the ground for a more constructive approach to epistemological problems. This point has been admirably put by J. M. Keynes in his *A Treatise on Probability*. He points out that the earlier metaphysicians had always demanded demonstrative certainty and that the success of the transcendental philosophy had lain in its ability to show that certainty could be obtained only by *a priori* methods. The earlier realists were vulnerable

to this criticism because they also accepted the dogma of certain knowledge. But, as Keynes points out, "When we allow that probable knowledge is, nevertheless, real, a new method of argument can be introduced into metaphysical discussions. The demonstrative method can be laid on one side, and we may attempt to advance the argument by taking account of circumstances which seem to give *some* reason for preferring one alternative to another. Great progress may follow if the nature and reality of objects of perception, for instance, can be usefully investigated by methods not altogether dissimilar from those employed in science and with the prospect of obtaining as high a degree of certainty as that which belongs to some scientific conclusions ; and it may conceivably be shown that a belief in the conclusions of science, enunciated in any reasonable manner however restricted, involves a preference for some metaphysical conclusions over others".[1]

We must now turn to our second question: what reason is there to suppose that induction can be successfully applied to nature ? To answer this question we must find out what are the general propositions which must be true of nature, if inductive generalizations can be arrived at about matters of fact. And secondly after we have discovered the presuppositions of induction, we must enquire as to the grounds for believing that nature does in fact conform to these general principles.

It has been traditionally held by logicians of all schools that the pre-suppositions of induction are the Law of the Uniformity of Nature and the Law of Universal Causation. The Uniformity of Nature while it asserts that nature is uniform is compatible with what Mill called the 'infinite variety of nature'. How is this possible ? Joseph maintains that by the Uniformity of

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1 Keynes. *A Treatise on Probability.* p. 240.

Nature we mean to assert only the unbroken reign of law, or in other words that there is *order* in the universe. If two things precisely similar in nature are placed in similar conditions they will behave in identical ways ; but just because these conditions are never fulfilled, variety becomes possible. We have similarity, not identity. As Joseph admirably illustrates : "Watch the movements of a waterfall, how it breaks into a thousand parts which seem to shift and hang, and pause and hurry, first one and then another, so that the whole never quite presents the same face twice; yet there is not a particle of water whose path is not absolutely determined by the forces acting on it in accordance with quite simple mechanical laws. No one would suppose that because the laws are unchanging, the waterfall must wear a monotonous and unchanging face; and so it is on a larger scale with nature".[1]

By the Law of Universal Causation is meant that every event must have a cause. We dealt at length with this question in the last chapter and especially with Hume's arguments to show that the law is synthetic, not analytical, as his predecessors had believed.

But the question arises : Do the Laws of the Uniformity of Nature and Universal Causation provide a sufficient basis for inductive reasoning ? It may be admitted that together these laws posit that nature will exhibit order, that past experience is some guide to future experience and that mere position in time and space are irrelevant to generalizations which have no special reference to time and space. So far so good. But as Keynes has pointed out these two presuppositions though necessary, cannot be considered sufficient and they do not help us much in solving the inductive problem proper. The two laws assert that the same total cause produces the sam effect. The fact is that in dealing

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1   Joseph, *An Introduction to Logic*, p. 402.

with actual problems we never, or very rarely, have complete knowledge of the cause. Our argument is always on the basis of partial data, or limited known resemblance between instances from which we generalize.

In what direction, then, must the two traditional presuppositions of induction be supplemented ? In general terms we might answer that what is required is not only that the universe should exhibit order but that the order should be simple. As Broad puts it : "Nature might observe the laws of logic and every change in the existent might be subject to general laws and yet nature might be utterly unintelligible. The laws might be too numerous or too complex for us to unravel : they might be such that it was practically impossible for us to isolate any one phenomenon from all the rest even to a first degree of approximation".[1] Let us then examine more closely the respects in which it is required that nature should be simple.

Keynes has drawn attention to an important assumption on which scientists act when they set about to discover the laws of the universe, and he calls it the Principle of Atomic Uniformity. What this principle requires is that, "the system of the material universe must consist, if this sort of assumption is warranted, of bodies which we may term (without any implication as to their size being conveyed thereby) legal atoms such that each of them exercises its own separate, independent and invariable effect, a change of total state being compounded of a number of separate changes each of which is solely due to a separate portion of the preceding state. We do not have an invariable relation between particular bodies, but nevertheless each has on the others its own separate and invariable effect, which does not change with changing circumstances, although, of course the total effect may be changed to almost any extent

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1   Broad, *The Mind and Its Place In Nature*, pp. 509-510.

if all the other accompanying causes are different.   Each atom can, according to this theory, be treated as a separate cause and does not enter into organic combinations in each of which it is regulated by different laws".[1]

Keynes goes on to point out that the Principle of Atomic Uniformity is in no way implied by the Uniformity of nature.   Natural laws might well have been organic rather than atomic and if that had been the case wholes, or causes acting in conjunction, would have produced quite different effects from the same causes acting individually or in wholes of different degrees of complexity.   In that case prediction would have been impossible and induction useless, even though nature might still be uniform.   If the Principle of Atomic Uniformity applies to nature, as indeed it seems to, natural laws will be seen to be far less complex than they would have been had they been organic.

Keynes has also drawn attention to another respect in which we require that nature should be simple, if inductive reasoning is to be applied to the understanding of nature.   This is called by him the Principle of Limited Independent Variety.

One of the commonest facts of observation, a fact which is represented in ordinary language, is that natural objects fall into a limited number of distinct classes or kinds.   In a natural kind certain groups of qualities go together and variation in these qualities is possible only within narrow limits.   A freak occurs when a particular object exhibits a variation beyond the narrow limitation which is generally accepted.   But our interest at the moment is in the fact that qualities are found in nature in certain limited and definite groups. And what the principle of Limited Independent Variety asserts is :   "that the objects in the field, over which

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1   *A Treatise on Probability*, p. 249.

our generalizations extend, do not have an infinite number of independent qualities ; that in other words their characteristics, however numerous, cohere together in groups of invariable connection, which are finite in number".[1]   More precisely the principle has been stated as follows : "that the amount of variety in the universe is limited in such a way that there is no object so complex that its qualities fall into an infinite number of independent groups (*i.e.* groups which exist independently as well as in conjunction) ; or rather that none of the objects about which we generalize are as complex as this ; or at least that though some objects may be infinitely complex, we sometimes have a finite probability that an object about which we seek to generalize is not infinitely complex".[2]

It remains to show how we actually make the assumption of a Limited Independent Variety in arriving at inductive generalizations.   The essence of our procedure in arriving at inductive generalizations may be briefly stated as follows : In a certain number of observed instances X we find the group of qualities $a_1 - a_s$ and the quality *b*. We also find two other groups of qualities $c_1 - c_n$ which are common to all cases of X and of $F_1 - F_t$ which are observed in some but not all cases of X.   We wish to establish that in all cases observed and unobserved whenever $a_1 - a_3$ occurs *b* will occur.   The group of common qualities $c_1 - c_n$ which are not covered by the generalization constitute what is called the positive analogy and a distinction is drawn between the total

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    1 *A Treatise on Probability*, p. 256.
    2 *Ibid.*, p. 258. I have omitted reference to Keynes' Theory of Generators in the interests of simplicity.

positive analogy, that is all the common qualities, and the known positive analogy, that is, qualities known to be common. The other group of qualities $F_1 - F_t$ which are common only to some cases of X constitute the negative analogy and there is a similar distinction between the total negative analogy and the known negative analogy.

Now in order to establish the generalization we try to accumulate a larger and larger number of instances of $a_1 - a_3$ (b), instances which also reduce the number of qualities $c_1 - c_n$ which are common to all cases but not covered by the generalization and thus to enlarge the group of qualities $F_1 - F_t$. In other words, the object is always to reduce the known positive analogy and to enlarge the known negative analogy, and the value of each additional instance depends on the extent to which it helps us in these respects.

In adopting this procedure we are obviously assuming that qualities always cohere in a certain definite and limited number of groups. If this assumption were not made and if any property could be connected with any other, an infinite variety of combinations would be possible and the process of increasing the known negative analogy would have to be carried on indefinitely.

To sum up : if induction is to be applicable to nature we must assume that in addition to laws of the Uniformity of Nature and Universal Causation, the laws of Atomic Uniformity and Limited Independent Variety also apply to it. These principles we might, following Keynes, call the Inductive Hypothesis.

The question then arises : what grounds have we for believing in the truth of the Inductive Hypothesis ?

It was Hume, who first made us aware that induction raises a fundamental problem, the problem of showing grounds for the belief that future experience will resemble past experience. To answer this problem, he showed that we cannot invoke the aid of any *a priori* principle, nor can we get help from experience itself, for all experience is of the past, whereas it is about *future* experience that we wish to make an assertion. Subsequent philosophers have either failed to see the problem or have distinguished themselves by failing to see the irrelevance of the answers they found to it. With the possible exception of Mill, the history of induction is a sorry tale of prejudice or thick-headedness from which there is little we can learn.

In a nut-shell the position is this. Not one of the principles of the Inductive Hypothesis can be considered self-evident, nor can experience demonstrate their truth. But, as Keynes has shown, if the Inductive Hypothesis has an initial finite probability exceeding 0 then this probability can progressively approach certainty as a limit by corroborating evidence. That the Inductive Hypothesis has such an initial finite probability is possible. In conclusion it might be just as well to remember with Mill, that since the Inductive Hypothesis is implied in all causal and inductive propositions, the probability of the most certain of them cannot rise above the probability of the hypothesis itself.

THE PROBLEM OF TRUTH

In this chapter we shall consider the question : *What do we mean by truth* ?

The common man uses the word truth in talking about his daily problems but he takes it for granted that he knows what it means. One reason why he is not bothered about the *meaning* of truth is that no one uses the word in a different sense from the one to which he is accustomed. This does not imply, however, that there is no problem : part of the task of philosophy is to show us difficulties which common sense, with its self-satisfied assurance, would tend to pass over and ignore.

The problem of truth is essentially a modern problem. Older philosophers tended to treat truth dogmatically and to assume that it presented no difficulties. However, the subject has been fully explored in philosophical discussion in the present century.

The first thing to note about truth is that it is a quality of propositions and beliefs. It is reasonable to ask of a proposition such as *there is a red flag waving in the breeze* whether it is true. Similarly, you can ask whether the belief that God exists is true. Truth, however, does not apply to objects or events in the external world. Objects or events are not true or false ; they merely exist or do not exist.

Having cleared the ground so far, we must point out that the question what we *mean* by truth is quite different from the question: how do we know that a proposition is true or what is the test of truth ? Take the example "The battle of Plassey was fought on a rainy day".

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Suppose also we decide that truth means *correspondence with fact*. How then are we going to test the truth of this statement today ? We cannot apply the test of correspondence for the simple reason that the *facts* in the proposition are not now present. We will, therefore, have to fall back on some other test, such as whether the proposition coheres with other statements made about the battle of Plassey ; an eye-witness perhaps may have left us a description of the kind of day it was. Here then, the test of truth would be coherence, though the proposition would only be true if the statement corresponds with what was the case. In this chapter we shall confine ourselves to the question : What is the *meaning* of truth.

Ramsay, and A. J. Ayer after him, have contended that "there is no separate problem of truth but merely a linguistic muddle".[1] The argument appears to be that to assert a proposition '*p*' and to assert that '*p* is true' is to say the same thing. Thus, 'it is true that there is a table in this room' says no more than 'there is a table in this room'. The phrase 'is true' is therefore superfluous. This seems to be an error. A proposition has a truth-value, it *claims* to be true. But it is surely a mistake to suppose that every proposition has the truth-value, true. Moreover Ramsay's example misleadingly suggests that the two propositions 'there is a chair in this room' and 'there is a chair in this room is true' are about the same thing or assert the same fact. The latter proposition is about a proposition and is *not* about the fact (supposing it to be a fact) that there is a chair in this room.

To examine whether any definition of truth is correct we shall adopt the following method. If any definition is the correct definition of truth, then in all cases where

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1 F. P. Ramsay, *The Foundations of Mathematics*, p. 142. and Ayer, *Language Truth and Logic*, II Ed. p. 88.

the word truth can be applied, the definition of it can be substituted without loss of meaning. Thus, for instance, if truth means 'p' then whenever we say the proposition x is true, we could say x is 'p'. Conversely to disprove any theory we shall have to show that although we can say of a proposition that it is true, it would be either false or meaningless to say of it that it had the quality 'p'.

The main theories about the meaning of truth are :—

1. The pragmatic theory—which asserts that true means useful.
2. The coherence theory—which contends that truth means coherence with other propositions.
3. The correspondence theory—that true means correspondence or accordance with fact.

The Pragmatic Theory

The Pragmatic Theory of truth has been held by several modern philosophers, the best known of them being F. C. S. Schiller of Oxford and William James. John Dewey who died in 1952 propounded a doctrine which though somewhat different from that of James and Schiller, is fundamentally pragmatic in conception.

James and Schiller held that true means *useful* and therefore that a belief is true if it is useful or if it works. In fact to put it more accurately, the pragmatist maintains that when you say that a proposition or belief is true, what you are asserting is no more and no less, than that the belief or proposition is useful. As James characteristically sums it up : "The true to put it very briefly is only the expedient in the way of thinking, just as the right is only the expedient in the way of our behaving. Expedient in almost any fashion ; and expedient in the long run and on the whole, of course".[1]

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1 *Pragmatism*, p. 222.

There are several difficulties in this definition of truth. In the first place, it is full of ambiguities. We might well ask of James, for whom is the belief to be useful if it is to be true ? Must the belief be useful to any individual or to a particular race or group ? Then again, the question arises, need the belief be useful only once to be considered true or must it be useful several times ? The main point of criticism which lurks in these ambiguities is that in defining true as the *useful*, James has made the conception subjective and changeable. A belief which may be useful for one individual or group of persons may be positively harmful for another group. This often happens in war, when the belief that a certain line of fortresses is more or less impregnable leads the defenders to neglect to take adequate precautions. This belief then, would on the pragmatist's account be true for the attacking force and false for the defenders. But if the same belief can be both true and false for different sets of people at the same time or if a belief can be true today and false tomorrow then, it is clear that the conception of truth is rendered meaningless. The pragmatist's definition then is not so much a theory of truth but, as some philosophers have described it, the annihilation of truth.

But apart from the difficulties and ambiguities mentioned, the fundamental question is : is it the case that by true we mean useful ? Not much reflection is needed for us to be fairly certain that in fact these two words stand for quite different concepts. This may be demonstrated in the following way. Take the proposition, 'the belief in x is useful but false'. This proposition may be false, depending on what x happens to stand for. The proposition is not, however, meaningless. But if useful and true and useless and false are two pairs of synomyms, the proposition could be alternatively stated as 'the belief in x is useful but useless'. And this propo-

sition is clearly meaningless because *self-contradictory*. This example, it has to be pointed out, however, is merely intended to demonstrate clearly the view of common sense, ultimately based on intuition, that by *true* and *useful* we do mean different things. The example reinforces the intuition but would not apply if it were denied.

Although the pragmatic theory of truth appears to be obviously unsound, pragmatists maintain that in fact the theory is based on the actual practice of science. The verification of scientific hypotheses, they point out, is conducted in a thoroughly pragmatic way. Experiments are made on the assumption that a certain hypothesis is true and if they are successful the hypothesis is said to be verified. As the pragmatist would put it, the hypothesis has *worked*, and is therefore true. If this is so, the pragmatic theory deserves far more credit that we have given it. Let us, however, see how far this theory is really based on the method of scientific verification.

The crux of the matter seems to be the meanings of the word *works* as used by scientists and pragmatic philosophers. When the scientist says of any hypothesis that it *works* what he means is that experiment or observation shows that *facts accord with* what was or might have been predicted on the basis of the hypothesis. In other words, *works* as used by the scientist means ultimately, accordance with observed facts. But when we examine what the pragmatist means by the workability of a theory, we find that he uses it as synonymous with satisfaction. Thus when William James says that the belief in the existence of God works, all that he is really claiming is that it gives one satisfaction. And this obviously is very different from what the scientist understands by the term *works*—although it is no doubt true that if an hypothesis works in the scientific sense it will also generally yield some satisfaction.

It is interesting to note that C. S. Peirce from whom James derived the idea of pragmatism, did not subscribe to the view that truth is to be defined as that which gives satisfaction. He writes, "Mr. Ferdinand C. S. Schiller informs us that he and James have made up their minds that the true is simply the satisfactory. No doubt ; but to say satisfactory is not to complete any predicate whatever. Satisfactory to what end" ?[1] For Peirce the end or object of knowledge was the expulsion of doubt by the methods of science.

A more sophisticated form of the pragmatic theory is put forward by John Dewey who replaces the conception of truth by that of warranted assertibility. Dewey conceives of life as a continuous effort on the part of the organism to adjust itself to the environment. The organism has inner urges which can be satisfied by partial modification or transformation of the environment. But the satisfaction of an inner need is only temporary. The old need gives place to a new one and this process goes on endlessly. This biological pattern is repeated in the intellectual sphere. Here the activity of inquiry is stimulated by doubt and ends in belief or knowledge. But a belief or piece of knowledge, so Dewey contends, cannot be described as unequivocally true or false. It can have only a "warranted assertibility" in relation to a particular inquiry and a particular stage in the history of thought. As Dewey says : "Were it not that knowledge is related to inquiry as a product to the operations by which it is produced, no distinctions requiring special differentiating designations would exist. Material would merely be a matter of knowledge or of ignorance and error ; would have the values true and false as final and exclusive attributes. But if knowledge is related to inquiry as its warrantably assertible product, and if inquiry is progressive and temporal,

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1. Quoted by Buchler in his *The Empiricism of C. S. Peirce, p.* 72.

there the material reveals distinctive properties which need to be designated by distinctive names. As undergoing inquiry, the material has a different logical import from that which it has as the outcome of inquiry". (*Logic : The Theory of Inquiry,* pp. 118-119).

"If inquiry begins in doubt", Dewey says, "it terminates in conditions which remove *need* for doubt". His biggest problem is to find an interpretation of the phrase, '*need* for doubt', which will avoid the subjective satisfaction of James. He tells us, therefore, that by doubt he does not mean personal doubt and the removal of doubt does not mean the satisfaction of a personal need. By doubt Dewey says he means a "doubtful situation" and by "conditions which remove *need* for doubt" he means conditions which are "operationally instituted and are such as to resolve the specific problem evoking the operations".

Dewey's explanations do not, however, appear to be convincing. We do not see how there can be doubt without a person who doubts. Nor can we see that there is any such thing as a *doubtful situation* as such. What is doubted or can be considered doubtful appears to us always to be a belief or a proposition. When faced with certain facts a person may form a proposition intended to describe or explain them and it is this proposition which may be doubted. A situation itself cannot be doubtful ; it merely exists. It can hardly be supposed, for instance, that the universe constituted a doubtful situation before man emerged and started reflecting about it.

Russell has given the following as a possible explanation of what Dewey might mean by a doubtful situation. Let us suppose that it is desired to change situation S into P and those who have investigated this problem, the experts, cannot tell us how this is to be achieved. Then the changing of S into P becomes a doubtful

situation.   And if it is found that action A changes S into P, then A acquires warranted assertibility.   But as Russell points out, this is equivalent to the assertion of a causal law, if S, A then P.   And this in turn implies the truth of causal laws.[1]   Thus Dewey's modified version of the pragmatic theory does not provide a satisfactory account of the meaning of truth.

Before we end this discussion of the pragmatic theory it would not be out of place to refer briefly to another definition of truth which can be found in James' writings. He maintains that true is identical with the verifiable. Thus on page 201 of his *Pragmatism* he writes : 'true ideas are those which we can assimilate, corroborate, verify. False ideas are those that we cannot'.   In other words, James is maintaining that a proposition is true if it is verifiable or that a proposition is true if there is some method by which we can know that it is true.

To this definition of truth there are two objections. In the first place every one will agree that there must be several propositions which are either true or false although these propositions are not verifiable.   Take the proposition 'there were 5000 specks of dust in the fireplace yesterday'.   If no one counted them and if the fireplace has been subsequently disturbed, there is no means by which I can verify the proposition today and yet it must be true or false, for there must have been 5000 specks of dust or not 5000 (either less or more) and not both.

But there is a further difficulty about *verifiability* being the *meaning* of truth.   The difficulty is that any method of verification implies a prior knowledge of the meaning of truth and therefore verifiability cannot possibly be what we mean by truth.   Thus, for instance,

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1   *An Inquiry Into Meaning and Truth*, pp. 223-34.

if I want to verify the proposition 'the sky is cloudy now' and proceed to do so by going out of my room to see if it is so, then obviously this shows that I must understand by truth accordance with facts. In other words, our objection is that the notion of truth is more fundamental than that of verification and naturally therefore the former cannot possibly be defined in terms of the latter.

The Coherence Theory

It is difficult to do justice to the coherence theory of truth in an elementary account such as the one to which we are necessarily confined in this book. The reason for this is that the theory forms a part of the philosophy of Objective Idealism and is maintained only in the context of that philosophy and its peculiar views of the relation between thought and reality. We are fully conscious of our limitations which will inevitably prevent us from expounding the theory with complete accuracy.

The coherence theory maintains that truth is a quality which a proposition has not in isolation but in relation to other propositions. A proposition is true if it coheres with other coherent propositions. Philosophers who defend this theory recognise degrees of truth ; the larger the body of coherent propositions with which a particular proposition coheres, the more true it is, or the greater the degree of truth attached to that body of propositions.

If we are to have an accurate idea of this theory we must guard against a mistaken interpretation of coherence. The theory does not maintain, as Joachim has pointed out, that a proposition A is true because it coheres with B which is true. If this were the case then in saying a proposition was true we would mean that A is true because it coheres with B but B is true because it accords with fact. Coherence itself would then ·be

definable in terms of correspondence. This, however, is not what is meant. What the theory asserts is that A and B must cohere with each other and they are both true if this coherence obtains.

But can we really mean this when we say that a proposition is true ? We think there are several reasons for believing that we cannot.

(1) Supposing that there are only two persons in the world, A and B. Further that A holds the contradictory of every belief held by B. If then, true means coherent with the largest system of coherent beliefs then the absurd consequence will follow that neither of two contradictory sets of beliefs is true. For it is clear in our example that there will be no set of coherent beliefs larger than the other—the two sets of beliefs will be equally large.

Supporters of the coherence theory urge that the conditions laid down in our example do not hold in fact, and that there is a set of coherent beliefs which is larger than any other. But this is to miss the point of the argument which is purely logical and has nothing to do with facts. As Prof. Moore has pointed out in a different context, supporters of the coherence notion commit the fallacy of thinking that an alteration in the facts can make a contradiction cease to be a contradiction.

(2) The coherence notion of truth cannot account for the truth of a proposition which expresses the law of non-contradiction, such as A cannot be both B and not B. It will be obvious that the truth of this proposition cannot depend upon its coherence with other coherent propositions. In fact, this proposition provides one of the bases of the notion of coherence itself—if two contradictory propositions could be true at the same time, coherence would be meaningless. Coherence, then, implies the prior truth of the laws of thought, it cannot, therefore, be what we mean by truth.

(3) If truth means coherence, progress in science would be impossible. A new scientific theory begins to be formulated on the basis of a few facts which do not fit in with the existing hypothesis. It is only as a result of research conducted on the basis of these initial facts, and frequently not for decades, that more facts are brought to light and the theory finally grows into a large rounded system of coherent beliefs. It is only at this stage that it can be considered to subsume in a coherent system a larger number of facts or propositions than the hypothesis it replaces. But if coherence were what was meant by truth, scientific discoverers could not reasonably cling to a few awkward propositions which were irreconcilable with accepted theories. And if these propositions were abandoned as false (as they would have to be if truth meant coherence with the largest body of coherent beliefs) then scientific knowledge would remain where it was. It is for this reason that it is said that the coherence notion is wedded to conservatism.

The Correspondence Theory

This theory maintains that a proposition or belief is true if what is asserted corresponds with or is in accordance with facts. In other words, truth means correspondence or accordance.

To grasp clearly how a proposition or belief can correspond with a fact, we must explain more fully the nature of both facts and propositions. The first point to note is that whatever is asserted in a proposition, or the fact referred to in a proposition, is always complex in the sense that it is composed of elements in relation. Thus the fact referred to in the proposition *Laila loves Majnu* is, Laila's-love-for-Majnu, or a complex composed of two terms *Laila* and *Majnu* and the relation of 'love' which exists between them. But in addition to constituents and the relation, there is a further factor involved and that is what may be described as the *form* or *tructure* of the fact—that is the manner in which the

elements and relations are combined with one another. Thus the *form* or *structure* would be altered if the fact were Majnu's-love-of-Laila, though both the terms and relation composing it are the same. In this way more complicated facts can be found in which there are several elements and relations existing with different forms or structures.

So far we have confined ourselves to giving a description of facts—but we find that propositions too are capable of a similar analysis. The proposition *Laila loves Majnu* is also composed of two elements and a relation and it has in addition something which may be called its *sense* or *direction*, analogous to the structure of the fact. It is this sense which would be altered if the proposition were *Majnu loves Laila*.

We are now in a position to explain more fully what we mean when we say of a proposition that it corresponds with a fact. What we mean is that there is a one to one correspondence between the elements, and their relations in the fact and the terms and relations of the proposition. Further that the *sense* of the proposition accords with the *structure* of the fact.

We maintained at the beginning of this chapter that truth was a quality of propositions. That assertion must now be qualified for although truth is a quality of propositions it is a quality which they cannot have in isolation but only in relation to facts. This point is important, for it is nothing more nor less than a realization of the commonsense view that the truth of a proposition depends entirely on factors outside itself, namely, on facts. On this rests the objectivity of truth.

Another point to notice is that the correspondence theory makes it possible to explain falsehood. This is important because propositions and beliefs are quite as often false as true, and any theory of truth would be obviously inadequate, if according to it all propositions

would necessarily have to be true. On the correspondence view a proposition would be false if no one to one correspondence existed between it and the elements and relations of the fact, or if the sense of the proposition did not accord with the structure of the fact.

Although the correspondence theory is the one which appeals most to commonsense, a good many philosophers, and perhaps the most respectable of them, have rejected it as false. Their ground for doing so is the belief that to talk of correspondence between facts and propositions is meaningless—either the two must be identical or else different from each other and each alternative, it is held, makes correspondence impossible. We would be guilty of scant justice to idealists if we did not get to the bottom of this objection which is fundamental not only for the issue of realism versus idealism but als of monism versus pluralism.

What then is behind this somewhat paradoxical assertion that we cannot have, as the correspondence theory implies, a fact and a proposition, two separate entities with a similar *structure* ? The argument hinges on the distinction between internal and external relations and the idealist contention that all relations must be internal. Idealists maintain that every relation is part of the nature of the terms between which it may exist. Take, for instan e, the relation of *being a mother* which may exist between a woman and her child. The contention is that motherhood is part of the nature of the woman in question. A person must in the first place be a female for it to be possible for her to be a mother and then in addition many other conditions must be fulfilled if she is actually to be a mother. In the last resort every possible relation in which a thing may enter is determined by the nature of the thing—in fact the relations are part of the nature of the thing or at least qualify it. Carried to the logical extreme the principle

asserts that the *same relation* cannot possibly exist between two different sets of facts. If facts are different they must have different natures and be qualified by different relations. Incidentally it may be worth remembering that position in space and time would also be part of the internal nature of a fact. Thus it would not, on the theory of internal relations, be open to us to distinguish as we presume to do in ordinary life, between facts of so-called identical nature which occupy different positions in space and time.

What has been explained above is only part of the theory of internal relations, for a very important aspect is the denial that any relation can be external. An *external* relation may best be illustrated by the conjunction *and*. On this table lie a bottle of water *and* a bottle of ink. They just *happen* to be together. The relation does not qualify either bottle, neither bottle would have been different if they had not been brought into this relation. But such a universe of loosely connected parts is denied by idealists. If things are distinct, they can never be connected (we can't even count them as two) ; on the other hand, that they are connected is due to the fact that they are *really* all parts of a larger unity or one, the Absolute.

The idealist view of reality has been brilliantly expounded in recent times by the great British philosopher F. H. Bradley in his *Appearance and Reality* and every serious student must get to grips with the thesis of that work. For our present purpose, however, it is sufficient to examine only his argument on the impossibility of external relations.

The essence of the argument is that an external relation merely stands *between* its terms but having no link with the internal nature of either term it cannot connect them. We, therefore, require another relation which will connect the terms with the relation. And

this process goes on ad infinitum. As Bradley puts it "The links are united by a link, and this bond of union is a link which also has two ends ; and these require each a fresh link to connect them with the old. The problem is to find how the relation can stand to its qualities ; and this problem is insoluble. If you take the connection as a solid thing, you have got to show, and you cannot show, how the other solids are joined to it".[1]

What are we to make of this argument ? Bradley asks the question : how does a relation relate ? The answer metaphorically describes a relation as a *link* but it is worth noting in the passage quoted that the relation is also referred to as a *solid thing* as are the qualities themselves *between* which the relation obtains. Bradley then points out that the *link* or *solid body* cannot effect the required connection. His conclusion is that similarly the relation cannot connect two qualities.

But the question which is not faced is whether a relation is similar in all respects to a *link* or a *solid thing* to which Bradley has likened it. This obviously is the vital question since the entire force of the argument rests on the supposed analogy. Now it is evident that no effort has been made to establish an analogy, and to describe a relation as a *link* or a *solid thing* is to indulge in nothing more or less than a metaphor. Moreover the metaphor is false and the use of it shows that Bradley (and others of his school) had failed to appreciate the real nature of relations and to distinguish them clearly from qualities. It will have been noticed that both qualities and relations are likened by Bradley to solid things. It is evident that for him there is not much difference, if any, between a quality and a relation.

To the question : how does a relation relate ? The answer he provides is that in effect it must relate by

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1 *Appearance and Reality*, II Ed., p. 28.

means of a quality. When this leads to an infinite regress Bradley concludes that a relation cannot relate. But this is most illogical. "Foxhounds chase foxes you say ? Well, I will prove you are wrong. Here is a dog, a spaniel—incidentally I don't admit the existence of such a dog as a foxhound—you see it does not chase foxes, in fact it runs away at the sight of one. So I have proved you to be wrong : foxhounds don't chase foxes".

The question : how does a relation relate may or may not be capable of being answered. If the concept of relation is definable, the answer would consist in supplying the definition. Thus, for example, if you were asked : how is one railway carriage attached to the next, you might answer by describing a carriage and especially the hooking arrangement provided at either end of it. The description of the carriage would fulfil the same function in the example that the analysis or definition of the conception of relation would in the case we are considering.

On the other hand, the conception of relation may be simple and indefinable. In that case you would not be in a position to explain *how* a relation relates. All that you could do is to point to instances of relations and a person may observe how terms or qualities are related.

Bradley's procedure seems to imply the first of these two alternatives and when the explanation fails he jumps to the conclusion that relations cannot relate. Strictly the only conclusion he is entitled to draw is that the particular definition of relation—that is in terms of quality is not satisfactory. He might perhaps contend that no definition of relation could possibly be satisfactory. But Bradley would still not be justified in denouncing the conception of relation as 'meaningless and riddled with contradiction' for if relations are simple concepts Bradley's question would not be susceptible of a reply

which took the form of an explanation. Idealists themselves talk frequently of 'the unity of experience' and yet they do not think it necessary to explain *how* experience unifies. No more is asked by us for external relations.

Suppose, then, that we are not convinced by Bradley's argument. The question remains as to whether we can produce any reason for believing that at least some relations are external. An important consideration for believing in the existence of external relations is the nature of knowing. In chapter IV we pointed out that perceiving is a process of discovery in which the mind is directly aware of external objects. In this process, the act of perceiving does not in any way alter the object perceived and perceiving or knowing would, therefore, provide at least one example of an external relation. On the other hand, were this relation also to be internal, then the conclusion that would follow would be that no two persons could possibly perceive the same object. For, the nature of the object would be affected by each different relation into which it entered. It is easy to see that solipsism follows logically from such a premise.

Correspondence between fact and proposition, then, is possible and this idealist objection is seen to be without foundation.

SUBSTANCE

Commonsense believes that three types of facts exist in the universe. For instance, there are qualities, the blueness of the sky, the scent of jasmine, the hardness of the table. There are also relations. There is the relation of fatherhood, the relation of one thing being *greater than* another, there is the relation of one thing being to the *right of* another and so on. Experience then brings us into contact with qualities of various kinds and also into contact with several types of relations. The question arises : are there in addition existents of a third kind which may be described as substances ? Qualities exist, but they are always qualities of some thing, relations obtain, but they are usually relations between objects or qualities. Is there then a third class of existents—things which are neither qualities nor relations but to which qualities refer and between which relations hold ? Commonsense would answer that substances do exist, that colour, hardness and shape do not exist in a vacuum suspended in the air, that they are the qualities of particular objects which have them and which are distinct from these qualities. Let us see what happens to the notion of substance after it has been subjected to the process of philosophical analysis.

For convenience we may begin with the views of Rene Descartes. Descartes recognised the existence of two kinds of substance—infinite substance and finite substance. Of the former variety there was only one, God, who was the perfect substance. Finite substances were of two kinds, mind and matter. Descartes main-

tained that the essence of mind was thought or consciousness, the essence of matter was extension or spatiality. Every finite thing which existed was either a mode or kind of mind or a species of matter. These two finite substances, mind and matter were ultimate and indefinable. You could not analyse mind or consciousness into simpler parts—parts which when put together would give you mind. And the same, he believed was true about matter. What was mind could not be matter and what was matter was not also mind—the two substances were mutually exclusive.

The two-fold division of substances by Descartes is known sometimes as the double dualism of substances. There is the dualism between finite and infinite substance on the one hand and the distinction between mind and matter on the other. The dualism of substances, however, contains an obvious inconsistency. For when asked to define substance Descartes defined it as that whose existence is implied by its essence or nature. In simple terms what he meant was that substance was that the existence of which did not depend on anything else. In other words, substance exists in its own right, it is not caused or determined by anything external to it. But if he took his definition seriously Descartes would be forced to admit that there could only be one substance —namely God. For it is only true of God, in Descartes' philosophy, that His existence follows from his definition and is not dependent on any external fact; mind and matter the finite substances are on Descartes' own view created by God.

There is another defect involved in Descartes' notion of finite substances. He has more or less equated each of them with a *particular* quality—consciousness or thought in the case of mind and extension or spatiality in the case of matter. But the important fact about substance is that it is not a quality, no matter how important. It is conceived of as something *underlying* quali-

ties, as supporting them. In equating each finite sub-stance with a *single* quality Descartes had missed the essential point of the notion of substance, that of some-thing unifying a plurality of attributes.

These defects in Descartes' theory were removed in the system evolved by the Jewish thinker Benedict Spinoza. Spinoza's particular problem was ethical, he wanted to discover what the good life consisted in, what would give man lasting happiness. In attempting to answer this problem Spinoza was led on to consider the nature of reality and man's place in it. The con-ception of substance occupies the chief place in his metaphysical teaching.

What then does Spinoza mean by the term substance ? We might summarise his doctrine in the following points :   (a) Substance is self-caused and is the cause of everything else.   (b) Substance is indefinable ; that is, it cannot be understood by means of any other con-ception, while every other existent fact is explained by it.   (c) Substance is infinite, there is, therefore, only one substance.

These points need some further explanation.

(a) Spinoza believed that substance must necessarily exist, and that it could not be caused or brought into being by anything else. Starting from the point that something does exist, he argued that it must be either self-caused or caused by something else. If it is self-caused then obviously substance as he describes it must exist. If it is caused by something else then we are entitled to enquire of that whether it is caused by another. But whatever the answer, it is evident that somewhere a beginning must be made—and that beginning is sub-stance. In other words, whatever is dependent, demands for its existence something which is self-dependent. That which is self-dependent is substance.

(b) The point that substance is indefinable and cannot be understood by means of any other conception follows in Spinoza's theory from the conception of substance as *causa sui*. A thing is explained by its cause, and since substance has no cause apart from itself, it follows that it cannot be explained or conceived of except in terms of itself.

(c) In speaking of the infinity of substance Spinoza distinguishes infinity absolute, from infinity of kind. For instance, the series of numbers can be regarded as infinite, but they are infinite in their kind only, for facts other than the number series exist. On the other hand, substance is infinite absolutely, that is, nothing exists which is not a part or aspect of substance.

In Spinoza's system Descartes' finite substances mind and matter are described as *attributes*—two aspects of substance of which the human mind is aware. Every finite object is described as a *mode* conceived under the form of one or other of these two attributes.

The difficulties involved in the relation of attributes to substance and modes to attributes are problems peculiar to the philosophy of Spinoza and cannot detain us here. We pass on therefore to the conception of substance in the writings of Leibniz.

The question might be asked, granting that something self-dependent does exist, why cannot this something be of the nature of a quality, why must it be a substance? To this question neither Descartes nor Spinoza had produced an explicit answer, but it was assumed by them that qualities cannot exist in and by themselves, they must be qualities of some object or substance. This assumption was made explicit by Leibniz. He maintained that the relation between qualities and substance was essentially the logical relation of predicate to subject.

Leibniz pointed out that there are some terms which can only be the subjects of a logical proposition and never predicates. These terms represent substance. Thus for instance 'I' stands for a term of which several qualities can be predicated—'I am happy,' 'I am hurt' and so on. But 'I' cannot occur as a predicate of a proposition. Of course, there are terms which can both be predicates and subjects of propositions, but these terms do not represent substances.

But although this is an essential part of the meaning of substance in Leibniz's philosophy, it is not all that is implied by the term. Substance is also that which persists through change. A self, for example, develops and changes in time but if we are to call it the *same* self we must admit that whereas the qualities have changed, there is also an element which has remained identical with what it was in the past. This identical element is provided by substance.

While the conception of substance was being defined and developed by these philosophers in Europe, a group of thinkers in England was busy exploding this notion in slow but definite stages. John Locke, founder of the Empiricist school, who was a contemporary of both Spinoza and Leibniz, argued that the conception of substance is an empty abstraction which does not help us to explain anything. He pointed out that if an object is analyzed, it is found to consist of qualities in relation. A chair, for instance, has colour, shape, size, hardness and other qualities, but one never can get down to the *substance* in which these qualities are said to inhere. The conception of substance is thus an abstraction, something of which Locke merely said 'I know not what.'

Locke, however, did not consistently banish the idea of substance from his scheme of things. This was left to his successors Berkeley and Hume. Using

mainly the same line of argument Berkeley got rid of the conception of material substance, but he retained the idea of spiritual substance, the 'I' or *ego* which is supposed to remain unchanged through time. The final stroke was administered by Hume. Hume said that in point of fact the *ego* or 'I' is never experienced. When he looked into his mind, he found only fleeting states of consciousness, desires, thoughts, and so on, but he never came across the 'I' or ego. The debunking of the conception of substance seemed complete.

On the basis of this brief historical sketch let us try and summarise the main contentions of those philosophers who have defended the notion of substance. What do they mean by substance?

(1) Substance is a particular existent which is neither a quality nor a relation.

(2) Substance supports a plurality of qualities but cannot be defined in terms of them.

(3) Substance does not change but persists in time, it is the identical factor in change.

(4) Substance is self-dependent.

Let us see whether anything exists of which any or all of these statements is true.

(i) Obviously there are things which are neither qualities nor relations. A flash of lightning, for instance, or a sneeze, constitute particular existents which are not themselves either qualities or relations. In the same way particular individuals such as you and I are neither qualities nor relations.

It will be seen that the particular existents described above coincide with the class of objects which Leibniz said can only be the subjects of logical propositions. Qualities and relations can be predicated of things but you, a sneeze or a flash of lightning cannot be predicated of anything else. For the time being, we will describe such things as *events*.

(ii) We have seen then that events exist, that qualities and relations may be predicated of them and that events themselves cannot be predicated of anything.   It is also easy to see that every event must have a plurality of qualities—it exists, is related to other things, occupies a particular place in space and time.   The question then arises: Can an event be completely analysed or described in terms of its qualities and relations? If this question is answered in the affirmative, we will be justified in maintaining that although events exist or occur yet they are not ultimate.   That in the final analysis everything about an event can be stated in terms of qualities and relations, and therefore the conception of event can be dispensed with.   It is this latter view which was maintained by the empiricists as against the former which was held by the rationalists.

Put into our terminology the empiricist argument would be: Every effort to define the notion of event is a definition in terms of qualities and relations.   Therefore either every event is definable in terms of qualities and relations or else the notion of event is meaningless 'we know not what'.   But in both cases the notion is valueless.   The error in the argument is contained in the second alternative.   The empiricists were wrongly contending that because the notion of *event* is indefinable, it is , *therefore,* empty and meaningless.   This is, of course, nonsense.   The notion of *quality* is itself not definable but it does not follow therefore that it is meaningless. This argument then won't do.

But can we find any positive ground for believing that the notion of event is irreducible and ultimate? In our opinion positive proof has been given by the Cambridge philosopher McTaggart.[1]

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1   Cf. *The Nature of Existence*, Vol. II. Chapter XX XVI Spirit, especially pp. 62-69.

McTaggart's argument refers specifically to the self, that is, to spiritual substance and is designed to show that our knowledge of our own identity implies that the self is not a mere bundle of impressions as Hume contended.   It implies that there is in fact an unanalysable ego of which we have direct knowledge in introspection.[1]

McTaggart's argument is as follows.   Each one of us is an individual and unique self distinct from every other self.   But not only are selves distinct from each other, in addition, we *know* that they are distinct.   The argument hinges on this latter fact, our *knowledge* of our identity.   Any adequate theory regarding the nature of the self must account for it.

Now we can either know the self by acquaintance or description.   If the self is completely analysable in terms of qualities and relations, it is obvious that a description can be found which will apply to each particular self and to no other.   The question then arises can we find an exclusive description of the self.   McTaggart's answer to this is in the negative. Let us try and sum up the main point of his difficult argument.   If we are to have a description of a self which will be exclusive it must be in terms of some characteristic that is particular. Now it is suggested that the unique characteristic in terms of which we can describe a self is its experience. We can, for instance, assert that I am the person who has *this experience now*—the experience of writing at a particular table, with a particular pen, sitting opposite a vase of orchids.   No one else could possibly have *this experience* and even I could not have *this* experience a

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1   We have to remember that while McTaggart maintains that selfhood is ι simple idea like redness, selves are not simple particulars since each self has ɔarts.   Moreover McTaggart maintains that substance also is infinitely livisible. McTaggart's notion of substance would not satisfy most traditional ɔhilosophers but his argument remains valid for the limited conclusion which we are here intending to deduce from it.

second time—I could have a *similar* experience but it would ipso facto be a different experience. Let us for the sake of clarity call this experience X. Here, then, it is claimed we have an exclusive description of I. But, as McTaggart points out, although we have arrived at an exclusive description of I, the fact to be explained is *my knowledge of my own identity*. In other words, what is required is I should *know* that I am the I which is exclusively described by the experience X. But here we must know that the I making the assertion and the I described by X are identical. It seems obvious that this could only be known by acquaintance.

Support for McTaggart's position may be obtained from the following consideration. We have assumed in the last paragraph that we can arrive at an exclusive description of self in terms of a *particular* experience. But we might enquire how do we know that an experience is particular and unique? Reflection would, we think, reveal that a part of what we mean in asserting that experience is particular is that it is the experience of an individual. So that in fact far from the person being defined in terms of a particular experience, the unique experience is defined in terms of the individual whose experience it is.

McTaggart's conclusion is that self includes an unanalysable ego, substance or *event* in our present terminology, as an essential part of it which is known by direct acquaintance in introspection.

So far out argument has shown that the class of objects described as *events* can be distinguished from qualities and relations and that an *event* cannot be defined in terms of qualities and relations. In other words, the notion of *event* is as essential as the notions of quality and relation in understanding the nature of reality. But it will be objected that the notion of event cannot, as it stands, be said to be identical with that of substance. For persistence in time and independence

of other things are essential characteristics of substance. This brings us, therefore to points (iii) and (iv) mentioned above.

It is true that persistence in time is one of the characteristics associated with substance, and what is more an essential characteristic. Most philosophers would describe such things as *flashes of lightning, sneezes* as events rather than substances. Persistence through time would be an essential characteristic of substance. But the question arises: How long must an event last before it can be considered a substance? Philosophers have held very different views on this point—Spinoza maintaining that it must be eternal; McTaggart being content with a moment. Broad has suggested a via media. He maintains that it would not be absurd to talk of degrees of substantiality, one of the factors in assessing this being duration. A tree, for instance, which exists for years before it dies would be more of a substance than a flower which withers within a few days.

On the point of independent or self-existent as well Broad has suggested a compromise between two extreme views —that only the whole universe can be considered self-dependent, and that the minutest fact is partly self-dependent. Here again, he maintains, we have a criterion which can help us to determine degrees of substantiality. Those events which have a high degree of internal unity and can be largely explained in terms of their own structure may be said to possess a higher degree of substantiality than those which have less internal unity and are, therefore, more dependent on external objects. Thus a grown up man who is more independent than a child would be more of a substance and a community, if it were regarded as a substance, would be more of a substance than a single individual.

The conclusions of this chapter may be summed   up as follows:—

(i) The notion of *event* is distinct from those of quality and relation.

(ii) The notion of *event* cannot be defined and also cannot be dispensed with at least in the explanation of the self.

(iii) But the notion of *event* is not identical with substance—persistence and independence have to be added to the former before we can talk of substance.

(iv) The difficulty of interpreting the two criteria *persistence* and *independence* in an absolute sense gives rise to the conception of *degrees* of substantiality.

MIND AND BODY

We noticed in the last chapter that Descartes believed that there were two finite substances, mind and matter. That seems always to have been since the time of Socrates, the traditional view of European thought. For commonsense both seem to be very important and at the same time very different in nature. Commonsense, therefore, would ascribe to them an equal status in the realm of existence. As we have seen Descartes considered each to be a substance and Spinoza, who followed him, though not describing them as substances, called them *attributes,* a status second only in importance to substance itself. Here again it is significant to note that the two are placed on an equal footing. A notable fact about later philosophers is an overweening tendency to get rid of the commonsense conception according to which mind and matter are two opposite and equally important aspects of reality. Some philosophers have tried to explain away matter as unreal or an appearance of mind and others have contended that mind is a mere epiphenomenon of matter, the ultimate reality. With these philosophers the desire to *get rid of* or explain away mind or matter, as the case may be, has been *the* motivating factor in their philosophising.

Now it might strike one as being somewhat strange that this should be the case. One is, therefore, tempted to enquire why the desire to avoid the dualism of mind and matter should have exercised modern philosophers to so great an extent. The answer is the problem of mind-body interaction. Or more precisely the almost universally accepted view of modern philosophers that

two entities or substances as dissimilar as commonsense believes mind and matter to be, cannot possibly interact. We must, therefore, examine the arguments which have been urged against the interaction of mind and body.

Before we get down to an examination of inter-actionism—the commonsense theory that body and mind can and do interact—we must clear away certain ambiguities in some of the terms which we shall be using frequently. For instance, when we assert as interactionists that mental events *cause* bodily events or *vice-versa* what do we mean by the word cause? Obviously we cannot mean what we distinguished in chapter V as the scientific meaning of the term. We do *not* mean that if A is the cause of B we shall be able to infer B from the presence of A and *vice versa*. Evidently we cannot mean this since there would then be no problem of body and mind as no one denies that there is a uniform and regular sequence between bodily and mental events. When we use the word *cause* in connection with the mind-body problem we imply by it what we called the activity view of causation. Unfortunately this important sense of the word cause—for it is in this sense that we use the word in history and the social sciences—has not been carefully analysed and our discussion will, therefore, suffer from vagueness on an important point.

In his book *Mind and Matter*, Mr. Wisdom distinguishes the terms *cause* and *occasion*. He writes: "We must see the difference between what occasions an event and what completely explains an event. Consider the series of bumps which passes along a line of railway trucks. We might say that the cause of the movement of the last truck was the movement of the last but one . Someone might object to this statement and say that the movement of the first truck was part of the cause of the movement of the last. This objection is trivial because we meant that the direct

cause of the movement of the last truck was the movement of the last but one. This statement, however, is still open to a rather more serious objection. For clearly the movement of the penultimate truck would not have caused the movement of the ultimate truck if the ultimate truck had not been next to it. Hence the change in position of the penultimate truck does not provide the complete explanation of the movement of the ultimate truck. The previous condition of the penultimate truck, its proximity to the ultimate truck, forms part of the complete explanation of an event or change E2 involves usually both (i) a previous change, E1, and (ii) the presence of certain other circumstances which remain unchanged. Let us call the previous change the occasion of E2, and the other circumstances which are also necessary to the occurrence of E2 the conditions of E2. Thus the occasion of a sensation may be a disturbance in the brain, although such a disturbance might have been ineffective if the brain had not been 'furnished' with a mind."[1]

When we speak of mind-body interaction all that we normally imply is that mental events occasion bodily events and *vice versa*. This we think is what has been meant by traditional philosophers who have argued about the mind-body problem.

Let us then consider in detail the arguments which have been urged against interactionism. We will examine first what are called the scientific arguments before we go on to deal with the philosophical objections to this theory.

I. *Scientific Arguments*. The main scientific argument to show the impossibility of mind-body interaction is the argument from the Conservation of Energy. Popularly stated the gist of the principle of the conservation of energy is that the total quantity of energy in

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[1] *Mind & Matter*, pp. 66-67.

the universe is neither diminished nor increased—energy merely changes its place or form. But this is a most inaccurate statement of the meaning of the principle. More precisely it is held that the material universe is made up of conservative systems of energy and that non-conservative systems form parts of larger systems which are conservative. A conservative system is one in which energy remains constant though it may be differently distributed. For instance, to take Professor Broad's example, a gun, a cartridge and a bullet has a certain magnitude of energy which remains constant. Before the gun is fired, there is no energy in the gun itself or in the bullet, but a great deal in the chemical substances which form the cartridge. When the gun is fired, the bullet has most of the energy, the recoiling gun some and the cartridge none at all. In this case, so it is maintained, no energy is gained or lost, energy is merely differently distributed.

But how is the principle used as an argument against the interaction of mind and body? The argument is that if mind acts on body or *vice versa* energy must flow in and out of the material or mental spheres, which will thus cease to be conservative systems.

Is the argument valid? It seems to us that it is not and we must now consider the objections which can be raised against it. We propose to concentrate on attempting to show that assuming the Principle of the Conservation of Energy to be true and granting the premise that the material and mental spheres are separate conservative systems, the conclusion nevertheless does not follow from the premises. We shall, therefore, leave aside the question of the validity of the premises themselves. Professor Broad has, in our opinion, shown quite clearly that the conclusion does not follow from the premises. What reason is there to suppose, he says, that if A, a mental event occasions changes in B, a

physical event, that energy necessarily passes from A to B. The principle of the conservation of energy merely asserts that if a change occurs, energy passes from one place to another, within the conservative system. It does *not* assert that energy must always pass from cause to effect. Without the assistance of this premise the principle cannot yield the desired conclusion. This is an instance of a common error made by philosophers— the failure to distinguish all the different steps required by their argument and a consequent failure to establish all their premises.

The conservation argument, as we have seen, requires the suppressed premise: energy must always pass from cause to effect. This premise is not part of the Principle of the Conservation of Energy, nor is it implied by the principle. But are there any grounds to believe it to be true? Broad admits that the premise may be true in some cases but he gives a good example of how even within the material sphere it does not hold. He says: "Take the case of a weight swinging at the end of a string hung from a fixed point. The total energy of the weight is the same at all positions in its course. It is thus a conservative system. But at every moment the direction and velocity of the weight's motion are different, and the proportion between its kinetic and its potential energy is constantly changing. These changes are caused by the pull of the string which acts in a different direction at each different moment. The string makes no difference in the world to the particular way in which the weight moves and the particular way in which the energy is distributed between the potential and the kinetic forms. This is evident when we remember that the weight would begin to move in an utterly different course if at any moment the string were cut.

Here, then, we have a clear case even in the physical realm where a system is conservative but is continually

acted on by something which affects its movement and the distribution of its total energy."[1]

Thus although the conservation argument certainly does not show that mind-body interaction is impossible, we agree with Broad in his conclusion that it suggests the form which interaction might take. The part of the mind might well be similar to the function of the string in the example cited above. That is to say, it might determine the direction in which energy might flow within the body without adding to or subtracting from it.

Another of the scientific arguments which is sometimes brought against interactionism is what we may describe as the Reflex Action Argument. This is not a very convincing argument and we will, therefore, deal with it more briefly than we did with the last.

The argument may be broadly stated as follows: The neural basis of voluntary action, we are told, is not very different from that of reflex action. In both cases there is a direct connection between afferent nerves which conduct the stimulus to the spinal cord or the cerebrum and the efferent nerves which carry the motivation to the relevant muscles of the body. It is argued that there is no gap in the connection between these sets of nerves, no point at which the action of mind may intervene as a causal factor in voluntary action. Voluntary action, therefore, does not or rather cannot involve the action of mind on body any more than reflex action does.

Dr. Broad has pointed out that the argument tries to force an analogy where there is none. The protagonists of the argument are trying to insist that there must be a physical gap between stimulus and response if there is to be a gap in a purely neural explanation of voluntary action. And since there is no neural

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1 *Mind & Its Place in Nature*, pp. 107-108.

gap physically they conclude that the neural explanation also must be adequate.

But this argument, it is quite clear, is in fact no argument at all. For it does not follow in the least that there must be a physical gap between the afferent and efferent nerves to correspond with the gap in the purely neural explanation of voluntary action. Furthermore, voluntary and reflex action appear to be very different when we examine them introspectively. If both types of actions can be completely explained in identical terms, then this introspective difference is left unaccounted for.

We conclude, therefore, that the Reflex Action Argument is unsound, that it is based on an alleged similarity between reflex and voluntary action which is denied by common experience.

II. *Philosophical Arguments.* If we study the history of the mind-body problem from Descartes to the present day, we repeatedly come across the statement that mind and body cannot interact because the two are very different from each other. More often than not this particular difficulty in the way of interaction is not explicitly stated at all but is accepted implicitly almost as if it were a truth not worth questioning. In the circumstances it seems hardly appropriate to describe it as an *argument* against interaction. Nevertheless we must examine the proposition and see whether it can be defended. Mind and body, it is asserted, are so diverse in nature that they cannot interact. As stated the proposition is hopelessly vague and Dr. Broad exploiting this vagueness shows the argument little respect. He contends that a draught and a headache are very different in nature, and since they may be causally connected there should be no difficulty in assuming that causal relations may obtain between mind and body. But the illustration which Dr. Broad gives assumes the very

thing which the anti-interactionists would deny. According to them a cold in the head never could be caused by a draught. Let us then examine our proposition a little more patiently and see if it does not present vaguely and inaccurately, a real difficulty.

Dissimilarity may be of two kinds—(i) difference of degree and (ii) difference of kind. And the questions to be answered are whether differences of degree preclude interaction and if so, how great these differences must be. Or alternatively whether differences of kind make interaction impossible and what must be the nature of these differences of kind.

In the case before us, it is quite clear that the impossibility of mind-body interaction is not based on the ground that the two differ in degree. The basic assumption is that they differ in kind. We must, therefore, see whether there is any truth in the assertion that differences of kind make interaction impossible and we must examine more closely the nature of these differences of kind.

Mr. Wisdom has gone into this question at some length in his useful little book *Mind and Matter*. The substance of his finding is that cause and effect must be manifestations of what he calls, a Supreme Generic Variable. This is in accordance with the Principle of Generic Resemblance between cause and effect, which he and Professor Stout both accept.

According to this principle causal explanation implies that cause and effect must both be species of a common genus. For instance, A's desire to murder B is causally explained by A's hatred of C who is B's brother. This is a genuine case of causal explanation. We can see *why* A wishes to murder B. In this case we find that the cause and effect (hatred of C and desire to murder B) are both species of consciousness. The generic similarity between cause and effect illustrated by our example, according to Wisdom and Stout, holds true

in all cases of causal explanation. And what both of them deny is that mind and matter are species of any generic character or relation. Thus, as Wisdom puts it, matter or a material fact cannot ever produce or be the complete explanation of mind or a mental event and *vice versa*.

We have given but the barest outline of the Principle of Generic Resemblance. The principle is certainly very important and Mr. Wisdom's discussion most enlightening. The brevity of our statement, however, is determined by the fact that the principle is really quite irrelevant to our particular problem. As Wisdom himself says: "From the principle of the resemblance of the cause it follows that from among the facts which a material fact, such as a brain disturbance following on stimulation, shares in causing, must be a material fact. But neither of these deductions conflicts with our earlier result that decisions occasion or partly occasion sensations." As we have already stated our problem is not whether bodily events can *produce* mental events but the simpler one whether they may *occasion* them and *vice versa*.

We may conclude, therefore, that the philosophical arguments against mind-body interaction also do not hold.

If we have rejected all the arguments against mind-body interaction it is relevant to enquire whether there are any positive arguments which can prove such interaction and it is to these that we must now briefly turn.

Take the case of sensation—a feeling of pain associated with my finger which has been in contact with the sharp point of a pin. Wisdom points out that in this case we are *intuitively aware* that the pain is caused by the pin. In this instance the causal connection is a simple matter of *inspection*—and Wisdom, therefore, refers to this as the inspection argument. In appreciating this

argument it is important to note that it does not depend on association.   It is not contended that we decide that the pin is the cause of the pain because we repeatedly find the one associated with the other.   The argument is that the two are or can be, to be causally connected in the first instance.   The view that sensations are caused by material facts is strengthened by the consideration that if we rejected this theory it would become well-nigh impossible to find the cause of sensations. It would be impossible to find any mental fact which invariably preceded a particular sensation.

Wisdom has produced an ingenious argument, which he calls the *inclusion argument*.   He writes "......the fact that I am annoyed now may be due to the fact that I have just observed that my house is smaller than yours. But my observation would not have occurred unless your house were larger than mine; for the observation includes as its object the fact that your house is larger than mine.   Now if one complete particular fact F1 includes another F2 as a constituent of itself, then anything which F1 occasions is partly occasioned by F2. Here the *house*, a material fact is a part cause of my annoyance".

Similar arguments may be used to show the action of mind on body.   For instance, the inspection argument. The *decision* to try a particular stroke at tennis is the cause, a fraction of a moment later, for me to start making a particular set of movements.   Here I am intuitively certain that the action was determined by the decision.

The truth of the inspection argument as used above has been denied by Hume in his *Essay Concerning Human Understanding*.   Hume's points are as follows : (i) The argument implies the interaction of mind on body, which he considers miraculous, if not impossible. (ii) It is a fact which we cannot understand from exa-

mining the nature of the will, that the will has power over certain organs of the body and not over others. If there were any necessary connection between will and bodily action, the limitations of the will would be inherent in its own nature ; these would not have to be discovered through experience. (iii) He points out that there are numerous steps between willing and the carrying of the impulse to the muscle which we desire to move. Most of us do not even know what these intervening processes are. In the face of this the supposed direct awareness of power to move our limbs through willing must be a myth.

Here we shall answer only the third of these arguments. The first is not an argument since it is just this premise which has to be proved. The second argument hangs on Hume's view that only analytical propositions are necessary—a view which we have tried to show is false in chapter V. We come, therefore, to his third contention. But as Dr. Broad has pointed out Hume's argument would at most show that we cannot have intuitive certainty that our wills are the *sufficient* cause of our actions. Our ignorance of the physiology of willing would not make it impossible for us to see that willing is a *necessary* condition of voluntary action.

And this brings us finally to consider such material facts as motor-cars, watches, the works of Shakespeare and so on. The commonsense view is that the *design* which such things exhibit is dependent on mind. It is possible that these things are due to chance but it is improbable. Design, though not a conclusive argument in favour of showing the influence of mind on matter, should incline us to this view.

UNIVERSALS

In our observation of the world around us commonsense would appear to be wholly dominated by particular things to the neglect of another kind of existence which must be regarded at least as equally important. The common man notices this tree, that table, particular chairs, but unless he is a scientist or philosopher he is unlikely to spend much time thinking about what are called universals—those common features by virtue of which various particular and individually peculiar chairs are *chairs* or different trees are nevertheless *trees*. In fact, universals or the recognition of universals is of prime importance in the development of knowledge. For, knowledge as Plato puts it, is the attempt to discover the unities which underlie the multiplicity of phenomena. The search for order or law in the universe, through the various sciences, is nothing but the attempt to substitute general laws for particular bits of information.

But although the physical sciences deal largely with universals and the mathematical sciences exclusively with them, these studies do not concern themselves with enquiring into the nature of universals. This is a problem for philosophy. It is for philosophy to try and answer the question : What is a universal ? Does it exist independently of the particulars in which it is exemplified ? If so, what is the relation between the universal and the particular ? If not, can it be just a fiction which is created by the mind ? Let us see how far philosophers have been successful in tackling these problems.

Plato was among the first thinkers to draw the attention of mankind to the importance of universals. His

approach was not only through mathematics, but also through what probably interests a far larger audience, morals. In the 4th century B.C. Greece was passing through a period of political, religious and moral instability. Religion, and the moral code it enjoined, had been undermined as a result of various factors and the vacuum created in the spiritual life of the people had not been filled by any new set of values. What is more, the sophists or roving professional teachers, who appeared at this time did not help to improve matters. They taught that might is right, and other theories which would reduce morality to the level of personal likes or dislikes. To fight this moral chaos by providing a basis for an objective morality was one of the chief aims of Socrates. The theory of universals, or the theory of *forms* or *ideas* as Plato calls it, meets the difficulty in the following way. Take justice for instance. Plato maintains that there is a *form* of justice which exists independently of particular just acts and which is distinct from your or my ideas of what justice is. Thus particular acts can be objectively judged as just in so far as they approximate to this form of justice and statements about the nature of justice can also be seen to be true or false in relation to this norm.

What then is Plato's theory of forms ? Plato maintains that when we describe two particulars as belonging to the same class, we can do so only by virtue of the fact that both partake of a common form. Thus two similar objects, can both be described as beds, for instance, because both participate in or conform to a single archetype, a sort of ideal bed laid up in heaven. And so with other things—colours, sounds, mathematical concepts, truth and beauty. On the exact composition of the world of forms Plato is not quite clear. He was quite certain that there was a form of the triangle and of other mathematical concepts, and of the chief ethical notions such as good, right and nobility. Of another class of

things, organisms and physical objects like man, fire
water he seemed doubtful. And finally he felt con-
vinced that there were no forms of hair, mud, dirt
and their like. But these ideas were put forward tenta-
tively when Socrates was still a young man. On the
whole it would be safe to assume that the world of forms
is a pure and ideal version of the world of sensible
particulars of which the latter is a pale and shadowy
replica. This world of forms, the real world for Plato,
timeless and perfect, is the object of true knowledge
which is the philosopher's quest. Plato's description
of this ideal world and of the soul's efforts to reach
it, in various myths in the dialogues, constitute some
of the finest examples of poetic [prose in Western
literature.

For our present purpose we must restrict ourselves to
the main points of Plato's theory, his doctrine that
universals have a distinct and separate existence from
particulars. One of the chief problems raised by the
recognition of a world of universals or forms is their
relation to sensible particulars. Plato generally took the
view that particulars participate in the universal, though
he also occasionally held that the form should be re-
garded as the archetype or model and the particular a
copy or likeness. Exactly what is meant by *partici-
pation* is not explained but in one of his dialogues Plato
forcibly presents all the difficulties which beset his hypo-
thesis. Although it is not possible to detail here the
intricacies of the argument of the *Parmenides*, we must
notice briefly the two main objections brought against
the theory of participation.

(*a*) Parmenides points out that if the form partici-
pates in particulars it can do so in one of two possible
ways. Either the whole form exists in each particular.
But if this is the case then the form becomes many
instead of one. On the other hand, if part of the form

participates in each particular, then again the form becomes many through a process of division.

The point of the argument is that participation renders the theory of forms self-refuting. For, the entire point of the theory is that it is possible to assert a common form for different classes of particulars. And yet in each of the alternative ways of participation the form does not remain one; it becomes many, either by a process of multiplication or division.

(*b*) Parmenides contends that the hypothesis of universals or forms participating in particulars involves an infinite regress. This is said to arise in the following way. Take two men, for instance, m1 and m2. They resemble each other because a common form, that of M, participates in each of them. But if that is the case it is argued, there is a common characteristic relating m1 with M and this must be due to another form M1 and so ad infinitum. In other words, there must be not one form of man but infinite such forms. This is the famous third man argument which was later to be urged against Plato's theory by Aristotle.

Plato's writings do not give us any clear and thorough refutation of the arguments of Parmenides and we are left wondering how Plato could continue to maintain his theory without having some sort of answer to them. Professor Taylor, one of the best-known English commentators on Plato, however, points out that the arguments in the Parmenides are directed not against the theory of forms as such, which is taken to be necessary for knowledge but against the view that forms *participate* in particulars. Plato's inability to provide a satisfactory explanation of the relationship between the world of forms and sense must, however, remain a cardinal objection to his theory.

The names of Plato and Aristotle are supposed to represent opposite poles in philosophy ; one of the

fundamental points which divides them is the question of universals. But in this respect, as in others, Aristotle seems at first to take up a position in direct opposition to his master and then by various qualifications and amendments to end in a position closely resembling the theory he had set out to combat. For Aristotle, form cannot exist without matter : universals exist only in the particulars which exemplify them. Plato's world of forms, far from being the real world, is in fact wholly unreal : form in matter is the reality. The reasons which led Aristotle to abandon the theory of his master are similar to those which we have already glanced at in the *Parmenides*. But having gone thus far Aristotle admits the existence of God, the prime mover, who is described as *pure form* and at the other end of the scale of existence we have, at least as a possible abstraction, sheer formless matter.

During the Middle Ages the problem of universals was one of the chief questions which agitated the minds of the Scholastics. It is not possible for us to go through all the subtle distinctions which separated the opinion of one philosopher from another on this question. Scholasticism being a form of Aristotelianism the main trend was in favour of Nominalism as this doctrine was now called. But some sort of room was also found for the opposing theory of Plato, which was known as Realism. A generally accepted view, as represented by St. Thomas Aquinas, who is considered the greatest Catholic philosopher, was that a universal cannot exist as a thing—everything which exists is a particular. In so far as Plato maintained that a universal or form is a thing he was wrong. At the same time Aquinas concedes that every form represents perfection and as such must exist in God's mind as a pattern for creation. Thus, for example, God must have had the form of a circle— the perfect circle—in his mind before he created circular objects such as the earth and apples.

The nominalist position was carried a step further by the British empiricists Berkeley and Hume. Locke, while maintaining a nominalist stand on the existence of universals, nevertheless held that it was possible for the mind to form what he called abstract ideas. He believed that, for instance, we could frame a general idea of a triangle which was neither equilateral, isosceles nor scalene. This was denied both by Berkeley and Hume. Every idea entertained by a mind, they held, must be individual and particular. But as Hume put it, it was possible for ideas to be 'particular in their nature but general in their representation.'[1]. These ideas were the so-called general ideas of Locke.

Let us examine Hume's arguments for this thesis. Hume deals with this problem, as with the others he discusses in his *Treatise of Human Nature*, in a characteristic manner. He first produces arguments to show that the thesis he is attacking is logically or epistemologically impossible, and then goes on to demonstrate how the facts may be explained on the terms he employs, with the help of his sensationist-cum-association psychology. It is this intermingling of the logical with the psychological that makes the critical study of Hume both fascinating and disconcerting. For the logical part of the argument while obviously relevant, is wholly destructive ; and it is exceedingly difficult to determine the extent to which Hume's constructive philosophy must be dismissed as out-dated psychology.

But to get back to what Hume has to say on this subject of abstract ideas. His arguments are based on two premises :—

(*a*) that all simple ideas are derived from sensation or in his terminology, every simple idea is a copy of an impression ; and

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1 *Treatise of Human Nature*—Book I. Section VII.

(*b*) what is distinguishable and separable in idea must be distinct in fact. Thus, he would say that if we can distinguish the idea of body from shape the two must be distinct, and conversely what is not distinguishable cannot be different.

Essentially there are two arguments which Hume produces in support of his thesis. Firstly, he maintains, for instance, that a line is indistinguishable from its precise length, and an angle from the degree of the angle. These ideas also, therefore, in conformity with premise (*b*) cannot be distinguished from each other as is demanded by abstraction.

Secondly, he argues on the basis of premise (*a*) that every idea must be definite both in quantity and quality, since every external fact is determined in both respects.

If all ideas are particular how then can one idea stand for others as it so often does in language ? To solve this problem Hume falls back on his old answer, custom or habit based on the association of ideas. He writes : ''The application of ideas beyond their nature proceeds from our collecting all their possible degrees of quantity and quality in such an imperfect manner as may serve the purposes of life......When we have found a resemblance between several objects which often occurs to us we apply the same name to all of them whatever differences we may observe in the degrees of their quantity and quality...After we have acquired a custom of this kind the hearing of that name revives the idea (of these objects).''[1]

After Hume the problem may be said to have entered its modern phase. Recent developments on this subject can best be understood by tracing the different phases of Russell's thought on universals.

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1 *Treatise*, Bk. I, Sec. VII.

In an early work, the *Problems of Philosophy*, Russell defended a doctrine which was largely derived from Plato. He recognized two classes of universals— relations, represented in language by verbs and prepositions, and substances and qualities, denoted by adjectives and nouns. Universals as he put it, do not exist ; they subsist. The distinction between existence and subsistence is stated by Russell as follows. Things such as thoughts and feelings, minds and physical objects which are said to exist imply both time and place. Thus a thought exists at a particular time and in a certain mind which is related to space through a physical body. On the other hand, universals are timeless and cannot be referred to any particular point in space. In these respects universals differ from particulars and their peculiar mode of being is called subsistence.

In his presentation of the theory of the subsistence of universals in *The Problems of Philosophy*, there are two points worth noting. The first is his refutation of Hume's doctrine, which is the starting point of his own view, and the second is his argument to show that universals are in no sense *mental*, that a universal is like any physical thing in being an object *for* consciousness.

To begin with the first point ; Russell maintains that it is possible to prove the subsistence of those universals which are relations, though not those which are qualities, although the former class has largely been ignored by philosophers. You will remember that Hume had maintained that the mind can only entertain ideas which are particular but that a particular idea comes to represent other similar ideas through a process of association. Russell gives the examples of a white object which may be associated with other white objects and the use of a particular triangle in geometry to prove general truths about triangles. After explaining Hume's theory he writes : "But a difficulty emerges as soon as

we ask ourselves how we know that a thing is white or a triangle.   If we wish to avoid the universals whiteness and triangularity, we shall choose some particular patch of white or some particular triangle, and say that anything is white or a triangle if it has the right sort of resemblance to our chosen particular.   But then the *resemblance* required will have to be a universal. Since there are many white things, the resemblance must hold between many pairs of particular white things ; and this is the characteristic of a universal.   It will be useless to say that there is a different resemblance for each pair, for then we shall have to say that these resemblances resemble each other, and thus at last we shall be forced to admit resemblance as a universal.   And having been forced to admit this universal we find that it is no longer worth while to invent difficult and unplausible theories to avoid the admission of such universals as whiteness and triangularity."[1]

Russell then goes on to show that a universal is not mental, in the sense that its subsistence does not depend upon its being thought of by a mind.   Consider such a relational fact as 'Edinburgh is to the north of London'. Russell contends that the relation 'north of' is no more created by the mind than the terms, 'London' and 'Edinburgh, which it connects.   The proposition, as he points out, does not become true when we come to know it.   "The part of the earth's surface occupied by Edinburgh would be north of the part where London stands, even if there were no human beings to know about north and south and even if there were no minds at all in the universe."[2]

The error of believing that a universal is mental arises from the fact that we often speak of the universal *whiteness* as 'the idea of whiteness'.   If whiteness were

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1 *Problems*, pp. 1501-51.
2 *Problems*, p. 152.

not an object of consciousness but merely an idea *in* a mind, it would not be a universal at all. For in that case my idea of whiteness would necessarily be different from yours and the idea of whiteness I have now would be different from any idea of whiteness I may have in the future. But in that case it would be impossible to explain that element which all the ideas have in common, the element which makes them all ideas *of* white. This common element is of course the universal whiteness which is the object of consciousness on different occasions.

Having accepted the conclusion that there are such things as universals, or that universals subsist, Russell's problem was to determine somewhat more precisely the extent of this realm of subsistence. You will remember that Plato had to face a similar difficulty ; were there ideas of dirt and mud, for instance, he had been asked. Russell's early views on this question are admirably summed up in the following quotation from his *Principles of Mathematics*.

"Whatever may be an object of thought, or may occur in any true or false proposition, or can be counted as one, I call a term. This, then, is the widest word in the philosophical dictionary. I shall use as synonymous with it the words unit, individual, entity. The first two emphasize the fact that every term is one, while the third is derived from the fact that every term has being, *i.e.*, is in some sense. A man, a moment, a number, a class, a relation, a chimaera, or anything else that can be mentioned is sure to be a term; and to deny that such and such a thing is a term must always be false."[1]

Shortly afterwards, however, he realized that the position was in fact self-contradictory. Take for instance the proposition, 'the round square does not

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[1] *Principles of Mathematics.* p. 43.

exist'.   According to the theory outlined above, 'round square' is recognized as a universal having being or subsistence and yet this is the very fact which is denied in the proposition.   As he says "...we cannot regard it as denying the existence of a certain object called 'the round square'.   For if there were such an object, it would exist : we cannot first assume that there is a certain object, and then proceed to deny that there is such an object."[1]

The main fault which Russell finds with this   view is that it is a violation of a robust sense of reality.   Logic, he maintains, must no more admit a unicorn than zoology can ; for logic is concerned with the real world just as truly as zoology,   though with its more abstract and general features.[2]

On what principle then, is the realm of subsistence to be delimited ?   Russell points out that we should accept only the basic minimum number of universals which is consistent with the following :—

(a) Each universal should be simple and distinct from all others, *i.e.* universals should not be definable in terms of each other.   Thus,   for   example, *round square* or *unicorn*, would   not   in   Russell's opinion, represent universals, since each concept is definable— apart from the fact that the former is self-contradictory.

(b) The total number of universals recognized should be adequate for the expression of propositions about reality.

To determine precisely the number of universals which are required to explain the subject-matter of the different sciences and of logic and philosophy is a matter of detail : a problem on the fringes between philosophy and the sciences in question.   Russell's contribution to this problem has been in the sphere of mathematical

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1 *Principia Mathematica* Vol. I., p. 66.
2 *Introduction to Mathematical Philosophy*, p. 169.

logic where he has tried to work out what he calls a minimum vocabulary for the expression of mathematical propositions. What is interesting from our point of view is his treatment of what he calls pseudo-concepts like *number* and *class*, and we must briefly explain his argument as a development of his doctrine of universals.

An earlier school of mathematicians, a school to which Russell himself adhered in his very early days, believed that such terms as *class* and *number*, represented universals and were indefinable. ' But their theory was open to the objections we have glanced at in the preceding paragraphs. What was required was a theory which would give some meaning to propositions in which such terms occurred and would preserve a robust sense of reality. Russell's answer was the theory of incomplete symbols, or the theory of descriptions.

What, then, is the theory of descriptions ? A word says Russell, is a symbol, but symbols are of two kinds. Proper nouns, for instance, he points out, taken in isolation denote some fact in reality. Even if proper nouns occur by themselves they have meaning. These may be called simple symbols. Other words acquire meaning only when they occur in a proposition ; in isolation they have no meaning in so far as they do not directly denote any fact in reality. Russell, therefore, calls them incomplete symbols. Examples of incomplete symbols are 'a man', 'the present King of France', 'unicorn', etc. These symbols or *descriptions* as Russell calls them, refer to no fact in reality and as such they cannot be said to have meaning. They are, according to him, propositional functions, for having the *form* of propositions they are not completed propositions.

A description then is a variable and as such has no meaning. It acquires meaning when the values of the variable are filled in. Thus, for example, the phrase

'a man', according to Russell has no meaning, it has meaning only in the sentence, 'I met a man'. Here it would mean, 'I met X and X is human is not always false.' Or take another instance 'the present King of France'. This phrase does not denote anything. But as part of a significant proposition it would be equivalent to 'X is the present King of France is false for all values of X.' This is a significant interpretation of the phrase which does not commit us to peopling the realm of subsistence with all sorts of fanciful and even self-contradictory universals. As is widely acknowledged today it is difficult to exaggerate the importance of Russell's explanation of our ability to speak meaningfully of such things as 'round squares', 'unicorns', 'the present King of France' and so on.

Descriptions are of two main types, definite and indefinite. The former are of the form 'the so and so', *e.g.* 'the present King of France', 'the author of Waverley, etc. The form of the latter is 'a so and so', *e.g.* 'a unicorn', 'a round square' and so on.

One of the points to which Russell has devoted a good deal of attention is to show that a description cannot be reduced to, or cannot be substituted by a simple symbol. If this were not so, he points out, the statement 'Scott is the author of Waverley', would be merely a tautology and not a significant proposition. But it is not possible in a preliminary work such as the present to follow the details of Russell's argument or to consider the various ways in which he has used his theory of descriptions in dealing with the concepts of mathematics and physics.

The conclusions of this chapter may be summarized as follows :—

(i) It is impossible to describe the universe in terms of particulars alone.

(ii) Universals are not mind-dependent ; they subsist.

(iii) The recognition of universals does not commit us to peopling the realm of subsistence with fantastical and self-contradictory objects—we have indicated that such concepts can be dealt with by the theory of descriptions.

THE NATURE OF VALUE

There are several ways in which questions of value arise in speculative philosophy. For instance, there is the question as to whether there is a God and whether He is good. For all theists, there arises also the problem of evil. The facts of evil, pain, suffering, injustice cannot be denied. What then is the source of evil? If God is the source of evil, it raises doubts about His goodness. On the other hand, if there is some other principle which also operates in the universe which is evil, then what reasons have we for believing that good will ultimately prevail? These interesting problems, however, imply a more fundamental question which it is the business of critical philosophy to raise and answer. This is the question : what is the nature of value? When we talk about value, what exactly is it that we are thinking of? Is the word merely a high sounding alternative, a camouflage for some mundane fact of common experience, or does it denote a unique and peculiar idea distinct from all others? Our task then is to give a definition or analysis of value.

We shall take as the basis of our discussion the view held by Professor Moore, that value is a simple, indefinable non-natural quality. We shall deal in detail with the commonly held theory that value can be defined in terms of the natural qualities of pleasure or desire. That value can be defined in non-naturalistic terms is not a theory which is popular today. It is probable that a theory of this kind was held by T. H. Green of Oxford who maintained that the highest good was self-realization, but added that the self which should be

realised was not the self which we know in experience but some super-sensible self which he called the Rational Self. In his chapter entitled "Metaphysical Ethics" in *Principia Ethica*, Moore contends that Kant tried to define value in terms of the good will, also a super-sensible or non-natural fact. Theories of this kind we shall not attempt to refute. The reason for this is not that we do not regard these theories as important. Our procedure may be defended on two accounts. In the first place, a thorough consideration of such theories would take us away from out immediate problem into an examination of the metaphysical systems of which the particular definition of value is a part. For instance, in the case of Green's theory cited above, we would have to consider what he means by the Real Self, what reason he gives for believing that it exists. Only after that could we be in a position to judge the truth of his definition of value as self-realization.

In the second place, as we have already indicated, the present work does not make any claim to exhaustiveness. Our main object is to concentrate on the philosophical method and to give illustrations of its working by examining specific problems. An examination of naturalistic definitions of value will provide ample illustration of the analytical method in this domain.

Let us start then by examining some naturalistic theories of value, theories in which value is defined in terms of one or more natural quality. First we shall consider a view which has been well known in the history of ethical thought, that by value or good we mean simply pleasant. According to this theory, known as Hedonism, the valuable is merely the pleasant. Knowledge, so Hedonists would tell us, is valuable because it gives pleasure and in fact, when we say that knowledge is valuable what we mean in effect, is that knowledge gives pleasure.

It must be pointed out that earlier supporters of Hedonism, persons such as John Stuart Mill with whose name the theory is generally associated, did not clearly face the problem of the definition of value. Being more interested in purely ethical or moral problems they confused it with the question : What things or states of affairs are good or valuable in themselves ? It was only by implication or in attempting to prove that certain things were valuable that they were led into giving an answer to our problem, *viz.*, what do we *mean* by value. This at any rate is what Mill does in two well-known passages in his *Utilitarianism*. In the first of these (*Utilitarianism*, p. 32, *Everyman's edition*), he maintains that the proof that pleasure is valuable or in his words desirable is that it is actually desired, just as the only argument to show that a sound is audible is that it is or can be heard by someone. In this passage Mill has confused two senses of the word desirable—one, something which *ought to be* desired and two, something which is *capable of being* desired. As a result of the confusion Mill draws the mistaken conclusion that pleasure is valuable because it is desired.

In the second passage (Ibid, p. 36) Mill seeks to establish that pleasure *alone* is desired. He writes : "I believe that these sources of evidence (introspection and observation) impartially consulted, will declare that desiring a thing and finding it pleasant, aversion to it and thinking of it as painful, are phenomena entirely inseparable, or two parts of the same phenomena ; in strictness of language, two different modes of *naming* the same psychological fact : that to think of an object as desirable (unless for the sake of its consequences) and to think of it as pleasant are one and the same thing ; and that to desire anything, except in proportion as the idea of it is pleasant, is a physical and metaphysical impossibility".

Here, then, we have by implication a definition of value in terms of pleasure. Value is to start with equated with desire and in its turn desire is seen to be nothing but desire for pleasure.

The contention then is that value is pleasure, that these are but two ways of expressing a single fact. But is it a satisfactory definition ? There are various reasons. for believing that it is not.

In the first place it must be pointed out that if the definition of value in terms of pleasure is accepted, then the main contention of the Hedonists .that pleasure alone is valuable, that it is the only thing which *ought* to be desired, becomes a useless tautology instead of the significant proposition they intend it to be. For the statement that pleasure is valuable is nothing more than asserting that pleasure is pleasurable. This argument, however, does not necessarily show that the definition of value in terms of pleasure is incorrect. What it does show is that the definition is inconsistent with the meaningful assertion that pleasure is valuable. We must abandon either the definition or else the right to assert (with any significance) propositions such as *pleasure is good, pleasure ought to be pursued* and so on. For ourselves, we would rather abandon the definition. We would prefer to hold the view that *pleasure is valuable* is a significant proposition though we might believe that it was false.

Theories which define value in terms of pleasure or desire may take several forms. These theories and the objections to them are admirably summed up by Sir David Ross in his *The Right and the Good*. Ross writes as follows : 'Theories of this type are divisible into those which identify goodness with the presence of some feeling (1) in at least one person, no matter who he is, (2) in the person who judges an object to be good, (3) in a majority of persons of some class or other—

say persons belonging to a particular stage in the history of civilization, (4) in a majority of mankind, or (5) in all mankind.   To (1) there seem to be four objections. (*a*) It surely can hardly be denied that, whatever feeling we select as the feeling involved—whether, for instance, this be taken to be pleasure, or approval—a man may doubt whether a certain thing is good, even when he does not doubt that some one or other has had such a feeling towards it: (*b*) If what I mean when I call something good is that some one or other has a certain feeling towards it, and if what any other person means when he calls it bad is that some one or other has an opposite feeling towards it, we should not be at variance, because both propositions might be true. Yet if anything is clear, it is that we do suppose ourselves to be making incompatible statements about the object.   (*c*) If something, without changing its nature, at some moment aroused for the first time the feeling in question in some mind, we should clearly judge not that the object had then first become good, but that its goodness had then first been apprehended, and (*d*) it might be enough to ask whether any one finds it even possible to think that goodness could be brought into being by the feeling of some one or other, no matter how vicious or stupid or ignorant he might be.   It seems clear that by goodness we mean something at any rate more objective than that.

To the theory in form (2) the primary objection is identical with objection (*b*) above. If all I mean by saying that an object is good were that it arouses a certain feeling in me, and all you mean by saying that it is not good or is bad, were that it does not arouse that feeling, or arouses an opposite feeling, in you, we should not be at variance, for we might both be right. And objection (*c*) applies with just as much force to this theory as to the previous one.

To the theory in form (3) it may be objected (*a*) that it will follow that two people who claim to be

representing the feeling of majorities of different sets of persons will never be at variance if they pronounce the same thing respectively good and bad. Yet it is clear that even when two men belong to different sets of persons, the feelings of a majority of which they would on this view be claiming to represent, they believe themselves to be making incompatible statements when they call something respectively good and bad. Clearly, therefore, what they claim to be expressing is not the feelings of different majorities. But further (b) it is surely plain that there are cases in which a man thinks something good, without thinking that there is a majority of any class of men who have a certain feeling towards it. Even if we think that a majority of persons at our own stage of civilisation, for instance, would have feelings like ours if they attended to the object, we may feel sure that they have not attended to it and therefore have not the feeling in question towards it.

The theory in form (4) is not open to the first objection made to the previous theory. For any one who thought that a majority of mankind had a certain feeling towards an object would be at variance with any one who thought that they had not this feeling, or had an opposite feeling. But objection (b) to theory (3) applies with redoubled force to theory (4).

And finally, to theory (5) it applies with even greater force".[1]

In recent years some writers have attempted to present a theory which is essentially an interesting theory in a way which will avoid the criticisms detailed in the foregoing pages. This view which is known as the emotive theory has been developed in terms of what the authors believe to be the complexities, and especially the dynamic function, of language.

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1 *The Right & the Good*, pp. 82-84.

It is common ground for both naturalistic and non-naturalistic theories that value or good is regarded as a characteristic and that in ethical statements we assert this characteristic of an act, a state of mind or whatever is the subject of the proposition. These theories differ in respect of the definition of this characteristic. The emotive theory denies that an ethical statement makes an assertion at all. Although the two statements 'X is black' and 'X is good' appear to be of the same logical form, they are in fact very different. For while the former makes an assertion, the latter is really a command in a misleading grammatical form. Thus 'X is good' would be more or less equivalent to the remark 'How wonderful ! You must approve X'. Now this interjection or piece of rhetoric is clearly not an assertion. It cannot be characterized as true or false. On the other hand, it gives expression to certain feelings and has a persuasive character which is peculiar to ethical statements and which cannot be accurately expressed in non-ethical terms. Supporters of this theory emphasize the *emotive* meaning of ethical terms such as good, right, duty and so on. As Stevenson puts it : "The effect of ethical terms in attitudes, though not wholly dissimilar to that of imperatives, must be explained with reference to a characteristic and subtle kind of *emotive meaning*. The emotive meaning of a word is the power which a word acquires, on account of its history in emotional situations, to evoke or directly express attitudes, as distinct from describing or designating them. In simple forms it is typical of interjections ; in more complicated forms it is a contributing factor to poetry; and it has familiar manifestations in the many terms of ordinary discourse that are laudatory or derogatory."[1]

Thus, in other words, an ethical statement does not express a proposition which may be described as true

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[1]   C. L. Stevenson, *Ethics & Language*, p. 33.

or false. It is an expression of an attitude towards an object, act or whatever it is, with the purpose of suggesting or persuading others to adopt a similar attitude towards the object.

Mr. Stevenson contends that the usual arguments brought against naturalistic theories of value do not apply to the emotive theory. Moreover, the emotive theory meets the essential requirements for a satisfactory theory of value which Stevenson takes over from Moore.

It will be clear that if ethical statements are really commands, then the statements 'X is good' and 'X is bad' do contradict each other. There is thus on this theory room for intelligent disagreement on ethical matters—the disagreement resting on incompatibility of attitudes or interests. Stevenson has shown at length that many disagreements result from such differences of attitude. The theory also explains, in terms of their emotive meaning, the element of obligation which is conveyed by the ethical predicates.

Although developed with great ingenuity by certain writers it seems to us that the emotive theory of value is open to grave fundamental objections. To begin with it may be pointed out that the emotive meaning of statements has been over-emphasised at the expense of their scientific or descriptive meaning. The majority of statements have *both* an emotive meaning, which depends on association, and a scientific meaning. If our purpose is scientific we ignore the emotive meaning and concentrate our attention on the descriptive meaning of the statement. On the other hand, in poetry the emotive meaning of statements is of prime interest. Thus while admitting that ethical statements have an emotive meaning it does not follow that they have *no* scientific or descriptive meaning whatever. And in ethical or philosophical discussion it is this scientific or descrip-

tive meaning in which we are interested.   To describe the emotive meaning of ethical terms is a problem for the psychologist or sociologist ; it does not advance our knowledge of the philosophical or specifically ethical issues involved.   Thus it might be possible for us to agree entirely with Mr. Stevenson in his analysis of the emotive meaning of ethical terms, his explanation of the element of obligation or 'magnetism' which these terms have and regarding the basis of disagreement in ethical matters.   But our contention is that in the end we are forced to say that he has not answered our question, in fact he has not even set about trying to answer it. And that question is: What is the scientific or descriptive meaning of the word good or value ?

If it is contended that ethical statements are unlike the majority of statements and have *only* an emotive and *no* scientific meaning we are entitled to ask as to why this should be the case.   It seems to us that upholders of the emotive theory present two arguments. The first is based on a particular theory as to the types of statements which can be considered meaningful. Thus, for instance, Carnap in his *Philosophy and· Logical Syntax* (p. 22, etc.) writes, "A value statement is nothing else than a command in a misleading grammatical form... It does not assert anything and can neither be proved or disproved...From the statement 'Killing is evil', *we cannot deduce any proposition about future experiences. Thus the statement is not verifiable and has no theoretical sense* and the same thing is true of all other value statements".   (my italics)   In other words, ethical statements have no scientific meaning *because* they are not empirically verifiable.   Thus they have only an emotive meaning.   The efficacy of this argument depends wholly on the principle that statements which are not empirically verifiable are meaningless.   This principle has been examined separately in the next chapter where we have explained why we think it is false.   For the present it

is sufficient for us to say that statements of the form 'Y is good', 'you ought to perform such and such an act' do seem to us to have meaning.

The second argument in support of the view that ethical statements have only emotive meaning seems to us to be as follows. The statement, it is contended, 'X is right' is equivalent to 'perform X act'. The statement 'X is right', carries no meaning beyond this. It appears that this is the argument which Stevenson brings forward in the concluding section of his paper on *The Emotive Meaning of Ethical Terms*.

To this our reply is a straightforward denial. It is our contention that the statement 'X is right' is not translatable as 'perform X act'. There are several actions which I might command you to perform which are not right, and which I know to be wrong. The statement 'I command you to do so and so though I believe it to be wrong' is not a meaningless or self-contradictory statement which it would be if ethical statements were merely commands to perform or abstain from performing certain actions.

Stevenson has attempted to show that ethical differences and disputes spring from differences of attitude. An ethical dispute according to him is thus an attempt by the disputants to persuade the other party to adopt his particular attitude towards the point at issue. Thus if A says 'you ought to do X' and B says 'no, you ought not to do X' these persons according to Stevenson are merely expressing different attitudes towards X.—they are not contradicting each other *logically*. Our contention is that the assertion of these opposing statements does imply a *logical* contradiction. The differences in attitude does not explain away the logical contradiction involved in ethical disputes[1].

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1 *Mind*, Vol. 46.

Suppose we agree then that ethical statements do express propositions. Further that the predicate of these propositions cannot be defined in naturalistic terms. The question arises : What sort of characteristic is it ? Moore's answer, as already indicated is that it is a simple, non-natural quality. Moore contends that value or good as he calls it, is a simple, non-natural quality, and like other simple qualities it cannot be defined. Take the simple quality yellow, for instance. To know what yellow is like we must actually experience it. If you wished to explain to a blind friend what yellow is you could try to describe it in terms of physics. You could explain to him the structure of the retina and the nature of wave-lengths. You would then say that when waves of a certain length impinged upon a normal retina, the stimulation carried to the brain through the criss-cross of sensory nerves would register itself as a sensation of yellow. Your friend might then know something *about* yellow but yellowness itse'f would still remain a complete mystery to him. To *know* yellow he would have to experience it. This as we have already explained in our second chapter is true of all simple qualities; simple qualities to be known must be experienced directly. An so also with value.

But this very fact, the simplicity of the idea of value raises difficulties. No proof can be produced to show that when you are thinking about value, what you have before your mind *is* a simple and unique quality completely distinct from all others. All that you can claim is that on inspection you do find that this is so, that what you are thinking about cannot be explained or stated in terms of anything else. It must be pointed out, however, that the fact that there is not, and cannot be, any *proof* for the view that value is a simple and indefinable notion, need not cause us any anxiety. All sorts of indefinables are accepted by philosophers without any pricking of conscience. But the difficulty in this case is the fact of

disagreement itself, since there is no way of proving that those who maintain that value is indefinable are right and those who hold the opposite view are wrong.[1]

Although this lack of unanimity about the nature of value is unfortunate, it is not an objection to our theory. There is no reason to suppose that if value is a unique quality every one should be able to perceive this fact. Professor Perry, in his *General Theory of Value* urges that because the uniqueness of value is not evident to every one and further because Prof. Moore himself speaks of it with caution and hesitancy that *therefore* value cannot be a simple, indefinable quality. In this respect he says value is not like yellow with which Moore had compared it. But as we have already pointed out, there is no reason why all simple qualities should be equally easy to discern and recognize.

While we are on this subject it might be as well to make it quite clear that in saying that value is a simple quality *like* yellow, all that Moore obviously could have meant was that the two qualities are similar in the sense that both are simple. He obviously could not have meant that they are similar *in all respects*. It seems important to draw attention to this because of mis-interpretations of the comparison by Professor Perry in his well-known work referred to above. Apart from suggesting that both value and yellow should be equally evident, Professor Perry brings forward as an objection the fact that while yellow is a natural quality perceived by the senses, value is not. Of course yellow and value differ in this respect. This, however, is no objection to Moore ; indeed one of the points which is fundamental to his theory is that value *is* a non-natural

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1. Interested students are referred to Dr. Broad's difficult but valuable article in Proceedings of the Aristotelian Society, Vol. 34 entitled 'Is Goodness a name of a Simple Non-Natural Quality.' Broad draws attention to several important gaps in Moore's argument to establish his view.

quality, that any attempt to define it in naturalistic terms is bound to result in error.

If we accept the view that value is a simple indefinable quality, the question then arises ; what sort of quality is it ? In what way does it differ from other qualities ? That value is a quality, further that it is a simple quality are important facts about it, but surely there are also other facts which comprise its nature. Though interesting, these are difficult questions and not many philosophers have gone very far in attempting to answer them. We can present but the briefest account of these speculations in an introductory work of this kind.

To make a point first which has already been mentioned, value is a *non-natural* quality. In other words, unlike such qualities as colour, weight and sound, value cannot be perceived by the *senses*. In this respect it is like courage or humanity or cleverness, qualities which we apprehend with our minds.

It is said that value is what might be called a *consequent* rather than a *constitutive* quality. This means that value attaches to an object because of certain other qualities possessed by it. Value is not part of the nature of any particular object. In other words, if you wished to describe an object, say a picture, you would describe its form, colour, size and so on. For any one to be able to recognise the picture from your description it would not be necessary for you to say anything about the aesthetic value of the picture. Professors Moore and Ross, whose views we are now explaining, maintain that such a description would be a *complete* description even though nothing had been said about the value of the picture. On the other hand, the omission of any constituent quality from the description would mean that it was not a complete description.

The value of an object, then, is not one of its constitutive qualities, it depends for its existence on such

qualities. Moore and Ross emphasise that not only is value dependent on the constitutive qualities of the object but that it does not depend on anything else. This fact about value they denote by calling it *intrinsic*.

In speaking about value as being intrinsic, we must, however, guard against calling it an intrinsic *quality*. Somewhat unfortunately, Moore has distinguished the usages 'intrinsic' and 'intrinsic quality'. By the latter he means what we, following Ross, have called constitutive qualities. While we have not adopted his terminology in this matter, it would be just as well to avoid verbal confusion. If value is intrinsic then this characteristic, it is easy to see, follows from the fact of it being indefinable. If value were definable in terms of desire, for instance, obviously the value of an object would not depend on its own nature *alone*. It would depend partly at least on it being desired by one or more human beings.

What is the relation between the constitutive qualities of an object and its value which is dependent on them ? Professor Moore contends that if an object A has a particular value, say P, then whenever A exists and in whatever circumstances, it must always have value P. Further that anything which is exactly like A qualitatively must necessarily have value P. In other words, his contention is that if the constitutive qualities which jointly we call A generate the value P then the relation between A and P is a necessary relation. In Chapter V it will be remembered we explained how in the history of philosophy, two kinds of necessity have been distinguished. There is the logical necessity illustrated in mathematics and the causal necessity claimed by the laws of physical science. Into which of these classes does the necessity we are dealing with, fall ? May it not also be possible that we have a third and unique form of necessity as suggested by Moore ? These are interesting but difficult questions which we cannot hope to tackle within the restricted limits of this book.

PHILOSOPHY AND LANGUAGE

One of the most significant facts about philosophy today is its concern with language. Thirty years ago Russell expressed the view that the influence of language on philosophy had been profound and almost completely unrecognised. Today theory of language is fundamental to philosophy. The structure of language, some philosophers have thought, gives us a key to the structure of reality. Other philosophers have, on the basis of their theories, propounded entirely new programmes for philosophy. Even the traditionalist is dragged into the controversy since he must answer the critics of today if his conception of philosophy is to remain a living discipline. For purposes of convenience and simplicity we propose to consider two theories of language which have gained considerable currency in Britain, and to discuss the conceptions of philosophy which follow from them.

Let us examine first a few instances of this profound and unrecognised influence of language on philosophy. Consider the following sentences : 'A is A', 'Socrates is a man', 'Socrates is clever', 'Socrates is', 'Socrates is Plato's master', 'A human being is mortal'. Here the copula 'is' has a different significance or meaning in each sentence. There should be a different sign or symbol to represent each meaning. The use of the one word 'is' in every sentence may lead us to suppose that it is used in only one sense and we may be led into all sorts of errors by this systematic ambiguity of words.

Just as one may be misled by the systematic ambiguity of words, so the syntax of language may prove a stumbling block. In Aristotelian logic, for instance, the proposition is represented by the symbols S is P and it is

supposed that all propositions ascribe a predicate to a subject. This pre-eminence of the subject-predicate form in logic, reflects the importance of subject-predicate sentences in the grammatical syntax of Greek and other European languages. The extent to which this simple fact has affected the course of western philosophy can hardly be exaggerated. If the proper form of the proposition is that in which a predicate is ascribed to a subject, how are we to deal with such deviations from the norm as relational sentences or propositions ? The traditional answer has been to deny them. Propositions asserting symmetrical relations are somehow reduced to the subject-predicate form, while those asserting asymetrical relations, which are intractable to such reduction are treated as freaks or conveniently ignored. This denial of relations leads immediately to monism, and we see why European metaphysics has been predominently monistic.[1]

Enough has no doubt been said on this subject to convince the reader that philosophers have been influenced in their theorizing by language. We turn now to consider two typical views on the philosophy of language, Logical Positivism as expressed in the works of A. J. Ayer, and the theories of Ludwig Wittgenstein.

I.

One of the basic doctrines of the Viennese Circle founded in 1928 is that existential propositions have an exclusively empirical reference. It was the essence of Moore's technique that the terms and concepts used in philosophical discussion should be defined. The positivists felt that before we could define the meaning

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1. The interested student is referred to G. Ryles essay entitled 'Systematically Misleading Expressions—*Logic & Language*, first series and to the early chapters of Whitehead's Process & Reality which contain a powerful indictment of what he considered the vicious influence of the subject-predicate form.

of various terms we should be clear as to the meaning of meaning itself. And even if meaning were incapable of definition some criterion of it could be laid down. This criterion is the verification principle which asserts that only statements which are empirically verifiable have meaning. The principle has also been expressed by saying "the unverifiable is meaningless", "the meaning of a sentence is the method of its verification".

Under the term *empirical* positivists include sense-experience, introspectable data such as images, emotions and the like and perhaps in an elliptical sense, mental acts. When they speak of statements as being verifiable, they mean *verifiable in principle*. That is, in other words, it would be *possible* to obtain empirical data which would show the statement to be either true or false, though in practice such data may not actually have been obtained.

The empirical verification of statements, some positivists recognize, is subject to a further qualification. They admit that there are statements, which even in principle are not conclusively verifiable. Such for instance are statements which constitute the laws of science. If these laws are empirical hypotheses which help us to predict the course of future experience they never can be completely verified. An empirical hypothesis can at best be very highly probable. Thus Ayer concludes: "We say that the question that must be asked about any putative statement of fact is not, would any observations make its truth or falsehood logically certain? But simply, would any observations be relevant to the determination of its truth or falsehood ?"[1]

One of the important implications of the verification principle—a point on which all positivists lay great stress—is the belief that there are no synthetic *a priori* propositions. All propositions which are *a priori* and

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[1] *Language, Truth & Logic*, p. 38 IInd edition. All references to this work are to the second edition.

necessary are tautologous. We shall have more to say in this regard later. Meanwhile it maybe recorded that this contention, together with the verification principle, is of importance in showing the impossibility of metaphysics. If these principles are true it follows that the only type of philosophy which can be considered possible is some form of empiricism or phenomenalism. Any philosophy which speaks of substance, necessary connection between events, and value as an ultimate predicate, for instance, must be dismissed not merely as false but meaningless. Most of the traditional problems of metaphysics are ruled out as nonsense.

What then remains for the philosopher to accomplish ? This is what Wittgenstein has to say on the subject in his *Tractatus Logico—Philosophicus*. "The right method of philosophy would be this. To say nothing except what can be said, *i. e.* the propositions of natural science, *i. e.* something which has nothing to do with philosophy: and then always when someone else wished to say something metaphysical, to demonstrate to him that he had given no meaning to certain signs in his propositions. This method would be unsatisfying to the other—he would not have the feeling that we were teaching him philosophy—but it would be the only strictly correct method."[1]

We must turn now to an examination of the verification principle for it is this which is the corner-stone of both the theory and practice of logical positivists.

"A statement is meaningful if and only if it is empirically verifiable." We shall ask two connected questions about this principle. Firstly, is the principle itself empirically verifiable: in other words, is it meaningful according to the criterion stated by it ? And secondly, if the principle is meaningful, is it true ? To help us to

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[1] *Tractatus Logico-Philosophicus*. 6.53. pp. 187-189.

answer these questions we shall consider what type of proposition the principle is.

(1) It is natural to suppose that the verification principle is a synthetic proposition. Now according to the positivists all synthetic propositions must be empirical. In fact the distinction between analytic and synthetic is equated by Ayer with the distinction between *a priori* and empirical. In this respect positivists appear to have reverted to   pre-Kantian position by refusing to recognise these *two* sets of distinctions.

Thus the question which the positivist has to face is whether the verification principle can be empirically justified. What would such a justification involve? We would have to examine a large number of examples of all the different kinds of statements that have meaning and then find out whether they are all also empirically verifiable.   This would involve two things : (a) that meaning is a characteristic of statements which can be known by direct inspection. (b) That we should also be able to know by direct inspection that the proposition is empirically verifiable and *how* it is to be so justified. For this empirical justification would be *what* the statement means.[1]

It appears that in fact we are in a position to know (b) only in respect of one class of statements, *viz.*, statements about one's own sense-data.   But what about statements like "Smith is in pain now." This statement is seen to have meaning. On the positivist theory, however, it can be justified only by a complicated analysis which shows that the statement is really about my own sense-data. But we obviously do not see by direct inspection that statements

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1.   What I have to say here is based on Dr. Ewing's article on Meaninglessness, Mind Vol. 46 pages 384-385.   The points raised above appear to me to be implicit in Ewing's argument but I am not sure that he would approve of this restatement of it.   I am greatly indebted to Ewing's article throughout the critical part of this chapter.

about other people's feelings are verifiable in terms of our own sense-data and are thus statements about our own sense-data. If this were the case there would be no need for an analysis which is in any case unknown to most people and which would be denied by them as definitely not what they mean when they say 'X is in pain.'

On the other hand, because (b) holds good in respect of statements about my own present experiences it would be entirely unjustified to generalize that it holds in respect of all statements.

It is perhaps more important for positivists to establish (a) that the meaning of statements is a characteristic which can be discerned by direct inspection. For obviously unless you know *what* a statement means you cannot very well get about the business of verifying it. It appears to us, however, that this contention cannot be admitted by positivists.

What would this admission amount to? It would mean that we know *a priori* that a statement has meaning. We would know at least one class of synthetic propositions *a priori* and this is exactly what is denied by the positivists. The proposition asserted by them is: "the statement X has meaning." This is a synthetic proposition and is being asserted by them as true on the basis of direct inspection, that is *a priori*. And this as we have just pointed out is a possibility which is ruled out by positivists who maintain that there are no synthetic propositions which are known (that is, known to be true) *a priori*. Thus we see that the contention that we know by direct inspection that certain statements have meaning implies that one class of synthetic propositions (the class that assert that certain statements are meaningful) is known *a priori*. While the verification principle implies that some synthetic propositions are *a priori*, it is used by positivists to show that there

are no synthetic *a priori* truths and philosophers who claim that there are, are talking nonsense.

But on the other hand it seems impossible for the positivists to maintain that we do *not* know the meaning of statements by direct inspection and that this is discovered empirically, that is, through verification. For, as already stated, it is clear that we cannot set about the business of verification unless we know *what* is to be verified. Moreover confusion has been created by positivists by their use of the word *verification* in their principle. Normally, to verify means to prove to be true with reference to expected sensible experience in the future. So when positivists maintain that certain statements have meaning because they are verifiable, this can only mean that past experience has shown that similar statements have been verified, that is , have been shown to be true. In other words, the statements have meaning because other statements were true. Truth then is stated to be logically and epistemologically prior to meaning and this is an obvious absurdity.

(ii) If the verification principle cannot be justified as an empirical hypothesis, the only alternative is that it is analytic since, as we have seen, positivists deny that there are synthetic *a priori* propositions.

Using the term analytic in the sense discussed in chapter V the principle would amount to the assertion that "empirically verifiable" is part of what is meant by the term *meaning* itself. If this were the case the assertion of its contradictory would be self-contradictory. But it is clear that this is not the case. The proposition 'a statement is meaningful if and only if it is not empirically verifiable' is certainly not *self-contradictory* even though it may be false. The verification principle is thus not analytical in the sense in which this term has been used by us and most philosophers who are not positivists.

But is the principle analytical in the sense in which this term is used by positivists? According to positivists analytical propositions are tautologous, they merely record the intention of a person to use symbols in a particular way . Ayer illustrates this doctrine as follows.

"Thus if I say 'nothing can be coloured in different ways at the same time with respect to the same part of itself,' I am not saying anything about the properties of any actual thing; but I am not talking nonsense. I am expressing an analytical proposition which records our determination to call a colour expanse which differs in quality from a neighbouring colour expanse a different part of a given thing."[1]

Broad has drawn attention to the fact that on this theory a tautology resolves itself into a synthetic empirical statement about the speaker or writer or about the way in which most people use a language.[2] We shall not, however, consider this theory further for Mr. Ayer has subsequently explained that he holds neither of the views to which Broad had reduced his earlier statement.[3] He contends that an *a priori* sentence is a recommendation to use symbols in a certain way: it does not, therefore, express a proposition and cannot be described as either true or false. It may be mentioned that if the verification principle is merely a recommendation, given without reason or argument, there cannot be any ground for us to accept it.

It is interesting to note that in the preface to the second edition of his *Language, Truth and Logic* (pp.15-16), Mr. Ayer states that the verification principle is put forward as an analytical proposition in this sense of the term, as a recommendation to use the word *meaning*

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1   *Language, Truth and Logic*, p. 79.
2   *Are There Synthetic a priori Truths* : Aristotelian Society Supplementary Volume. 15.
3   *Truth by Convention* : *Analysis*, Vol. 4.

in a particular way.   Mr. Ayer hopes that·the positi-
vist's criterion of meaning corresponds with at least one
of the senses in which the word is used and that his
procedure is 'not, therefore, entirely arbitrary.'   He
admits that while use of the criterion may not be
admissible for the elimination of metaphysics he would
still defend it as a methodological principle. It seems that
this procedure has been accepted by many positivists,
including Wisdom, under the guidance of Wittgenstein.
To Wittgenstein's views on language we must now turn.

In an age which has been fertile in philosophical
ideas, which has produced such figures as Russell,
Whitehead and Moore, Wittgenstein will undoubtedly
stand out as the most influential thinker of his time.
During his life he published only one book, the *Tractatus
Logico-Philosophicus* and wrote one paper for the
Aristotelian Society in 1929 entitled *Logical Form*.
He shunned company, even of philosophers, and it is
not surprising that he should be unknown outside a
limited academic circle.   It is for this reason that we
propose to give here a bare outline of the life of this
thinker.

An Austrian, Wittgenstein was born on the 18th
April 1889 in a rich, cultured, free-thinking family of
Jewish descent.   He came to England at the age of
twenty to study engineering.   In the course of his
studies Wittgenstein became interested in the logical
foundations of mathematics, and thus came to Cam-
bridge to sit at the feet of Russell, who was then
engaged on his *Principia Mathematica*.   It was to the
stimulation that his thinking received from Russell that
the idea of the *Tractatus Logico-Philosophicus* took
shape.   The book was written in a lonely hut in Norway.
But World War I had broken out meanwhile.   Wittgens-
tein enlisted in the Austrian army and suffered
imprisonment at the hands of the Italians—an impri-

sonment from which Russell rescued him and the manuscript of his as -yet-unpublished book.   For several years in the early twenties Wittgenstein gave up philosophy and worked as a village school teacher. In 1926 he settled down in Vienna and reluctantly came into contact with the philosophers of the Viennese Circle, who shared some of Wittgenstein's views, and were anxious to have discussions with him.   Three years later Wittgenstein returned to Cambridge.   He received a doctorate for his *Tractatus* and became a fellow of Trinity College.   He lectured there for some years and in 1939 succeeded G. E. Moore as Professor of Philosophy.   He worked as a male 'nurse during World War II.   In 1947 he resigned his professorship to devote himself entirely to writing.   He died on the 29th April 1951.   A book entitled *Philosophical Investigations* which he had completed was published posthumously in 1953.   The teaching embodied in this work had begun to take shape round about 1930 and was contained in two sets of bound lecture notes which were privately circulated in Cambridge. To the wider world Wittgenstein's views were known through the writings of his colleague John Wisdom and others.

What then is the philosophy of language presented by Wittgenstein in his two published books?

Wittgenstein shared with the Logical Positivists the belief that only propositions with an empirical reference have meaning. But his analysis of meaning goes deeper. How do propositions mean? What, he enquires, are the characteristics   by virtue of which propositions can stand for or represent facts.

Wittgenstein's answer is that language is not con- ventional symbolism.   A proposition has meaning be- cause it *pictures* the fact which it stands for or represents. The essence of the proposition, Wittgenstein says, is to be found in hieroglyphic writing which pictures the

facts it describes.   The pictorial character of language, he believes, remains despite the introduction of the alphabet.   To understand this theory we must examine more closely what Wittgenstein means by a fact, what he means by a picture, and what finally is a *logical picture* for, the proposition is a picture of this generalized kind.

According to Wittgenstein a fact is whatever is the case.   The notion of fact is treated by him as ultimate and indefinable .   It may be described, however, as a combination of objects.   For example, *it is the case that there is a table in this room*—this may be taken as a fact. In this example, *table* and *room* are what Wittgenstein calls objects.   Objects then may be described as elements of a fact.   But in addition to objects, a fact also has a *structure*. This is the peculiar way in which the objects are related to each other.   Two facts may have the same objects as constituents but the structure would differ. Thus the fact, *that there is a table in the room* and *that there is a table outside this room,* have the same objects as constituents but they differ in structure. As Wittgenstein puts it, "The object is the fixed, the existent; the configuration is the changing, the variable" (*Tractatus* 2.0271). It is   important to remember, however, that structure is not a separate element in a fact. It cannot be named.   It should also be mentioned here, that there is a distinction between complex and atomic facts.   Complex   facts are composed of atomic facts, whereas it is the atomic fact that is a combination of objects.   The world is the totality of atomic facts.

With regard to pictures, Wittgenstein tells us that they present the existence and non-existence of atomic facts.   He writes as follows:—

"The picture is a model of reality.   To the objects correspond in the picture, the elements of the picture. The elements of the picture stand, in the picture, for the

objects. That the elements of the picture are combined with one another in a definite way, represents that the things are so combined with one another.. This connection of the elements of the picture is called its structure, and the possibility of this structure is called the form of representation of the picture." (*Tractatus* 2.12, 2.13, 2.131, 2.14, 2.15).

Wittgenstein goes on to tell us how the essential features of a picture are preserved in the proposition. "In propositions, thoughts can be so expressed that to the object of thought correspond the elements of the propositional sign. These elements I call simple signs–.–.–.. The simple signs employed in propositions are called names. The name means the object.

To the configuration of the simple signs in the propositional sign correspond the configuration of the objects in the state of affairs". (*Tractatus* 3.2, 3.201, 3.202, 3.203, 3.21).

Especially in the case of propositions it is important to remember, as Wittgenstein tells us, that the picture and the facts pictured, must belong to the same genre. "The picture can represent every reality whose form it has. The spatial picture everything spatial, the coloured, everything coloured, etc". (*Tractatus* 2.171). In other words, if you want to picture spatial facts your picture also must be in space. A photograph, for instance, is in space and can, therefore, repeat the exact spatial relations of the fact it pictures, a face, a tree or whatever it is. But this seems to raise a difficulty. For how it may be asked, is a proposition going to picture spatial facts, the proposition not being in space? Wittgenstein's answer is that the fact has a logical form and it is this logical form which has to be pictured. Every picture is thus a logical picture, though some pictures may also be spatial, like photographs. What Wittgenstein means may be made clear by an example. The rise and fall of a patient's tem-

perature can be shown in a graph. The graph is spatial and temperature is not. And yet the curve of the graph can represent a picture of the patient's temperature over a given period. Or to take Wittgenstein's example, "The gramophone record, the musical thought, the score, the waves of sound, all stand to one another in that pictorial inner relation which holds between language and the world. To all of them the logical structure is common." (*Tractatus* 4.014).

Wittgenstein distinguishes between elementary propositions and others which are not elementary. Following Russell we will refer to these as molecular propositions. The elementary proposition corresponds to the atomic fact. It is composed wholly of names in relation. A name is a simple sign which cannot be defined, its meaning can only be elucidated. Wittgenstein goes on to tell us that in the molecular proposition a propositional sign is a description and represents a complex. This description must be analysed into its constituent simple symbols and expressed in a definition. The meaning of complex signs and of molecular propositions depends ultimately on that of simple signs and elementary propositions. For, as Wittgenstein puts it, "Every definite sign signifies via those signs by which it is defined, and the definition shows the way." (*Tractatus* 3.261). The possibility of resolving molecular propositions into elementary propositions has been called by Russell the principle of atomicity and it is of importance because it is used by Wittgenstein to show that all molecular propositions are truth-functions, of elementary propositions. The theory of truth functions however, concerns inference and is not a part of the theory of meaning.

To complete our exposition of the picture theory we must draw attention to two points.

Firstly, Wittgenstein holds that the correspondence between the proposition and the fact is not a one-to-one

correspondence, the proposition contains a larger number of signs than there are elements in the fact. The proposition includes signs which are logical constants, such as "all" "some" "not", etc. These signs do not represent or stand for anything in the outside world. They are merely symbolical devices.

Secondly, just as Wittgenstein holds that the structure of the fact cannot be named so he contends that the sense of a proposition cannot be stated. A proposition shows its sense. What a proposition says cannot be explained. What Wittgenstein is driving at may perhaps, become clearer when we consider, for example, the difficulty of explaining to someone, who already knows the language, what we mean by a certain proposition. We can only translate our sense into other forms of expression, in the hope that one of these propositions will be clearer than the original, or will make the sense clear. But we cannot tell the person *what* we mean in the same way in which we can tell him that there is a table in this room.

It is beyond the scope of the present chapter to examine in detail the various questions that arise regarding the picture theory. We propose, however, to refer to a few of these issues in so far as they help us to form a clearer idea of the theory itself.

It has been pointed out that the analogy between the proposition and a picture has been pressed too far. There are, for instance, no such things as foreign pictures in the sense in which there are foreign languages which have to be learnt. In the case of a foreign language it is evident that the proposition does not show its sense. Wittgenstein is himself not unaware of this distinction for he says in one place that there is indeed something arbitrary about language, but he adds that once this arbitrary decision has been taken, other things follow logically. It is in recognition of this arbitrary element in language that he says that the logical picture is like a

graph or a map.   It is evident, however, that pictures, maps and graphs are not symbols of the same kind. Reflections, pictures and maps are what C. S. Peirce has called icons.   An icon is a symbol which signifies by virtue of a property which it shares with the object signified.   On the other hand, a graph is not an icon and Wittgenstein's attempt to assimilate graphs and language to pictures does violence to the nature of lang-uage.   The main difference between a picture and language may be stated as follows.   The picture re-presents and arranges, whereas language states and describes.   Suppose, for instance, that the fact to be symbolised is a cat sitting by a kitten.   In the picture the objects will be represented by a cat and a kitten respect-ively and these objects will be *arranged* in a certain , way—the cat will be to the right of the kitten or whatever is the case.   As a consequence of such *representing* and *arranging* the picture shows its sense, it is its meaning. On the other hand, in the sentence the word 'cat' does not represent the cat.   The word merely stands for the object.   Again the words 'cat' and 'kitten' are not *arrang-ed,* one to the right of the other nor is 'cat' larger than 'kitten', as in the picture and the fact.   This arrange-ment or relationship of the objects is merely described we say "the cat is to the right of the kitten".   Thus to describe the proposition as a *picture* of reality is to use the word picture in a misleading way or else to give a false description of the nature of propositions.[1]

Wittgenstein has argued that there must be atomic facts.   His argument is that if there are no simple facts the analysis of meaning would go on endlessly.   The meaning of a proposition would depend on the defini-tion of the complex signs contained in it ad infinitum. In that event we could never arrive at the meaning of

1   Cf. Daitz, *The Picture Theory of Meaning*—Mind, April '53.
2   Weinberg, *Examination of Logical Positivism*, pp. 52-57.

any proposition. So, Wittgenstein concludes, there must be atomc facts and these are represented by elementary propositions comprised of simple signs which are incapable of further definition. Critics have shown, that Wittgenstein's argument assumes that propositions are pictures of facts. In other words, the picture theory itself assumes a universe of atoms.

Wittgenstein has stated, that the picture *shows* its sense and what can be shown cannot be said. On this basis, he has argued that everything which may properly be regarded as philosophical—that is, structure or what is common to the logical picture and the fact—cannot be discussed or spoken about. Thus he has contended, for instance, that the words true and false signify nothing. A proposition is true when it agrees with reality. The result of the comparison of the proposition with reality is that it reveals agreement or disagreement and this has to be *seen*. Yet we find that Wittgenstein frequently uses the words true and false and he has a good deal to say about the very things which on his theory cannot be stated. This suggests the inadequacy of the picture theory according to which propositions can only *show* their sense. Russell and Carnap get over this difficulty by recognizing different languages or levels of language. Thus the primary or object language is that in which we make assertions about matters of fact, "There is a chair in this room", for instance. True and false on the other hand refer to propositions and they can occur only in a higher order or secondary language, the langage in which we talk about propositions of the primary language. So much for the picture theory as expounded by Wittgenstein in his *Tractatus-Logico-Philosophicus*.

That philosophy is an activity Wittgenstein had taught in the '*Tractatus*'. The nature of this activity was determined by the picture theory of meaning which delimited the sphere of the speakable. According to

Philosophical Investigations too, philosophy is an activity but the nature of the activity is different because the picture theory has given place to an entirely new approach to the whole question of meaning.

In bare outline the thesis of the *Philosophical Investigations* is that in the past, philosophers have searched for the essence of language, and they asked for the meanings of words; they have imagined that language performs some *one* function, that words mean in just *one* way, that the meaning of a word must be precise, definite, clear. This has involved them in difficulties and has made them try to force language into a single mould, to pigeon-hole the meanings of words. But language is a living and expanding activity. It performs various functions and new ones can be added. To know a language is not to know the meanings of words; it is the ability to practise a technique. So, instead of asking for the meanings of words, we should study their use, their functions and their application.

To generalise is to create confusion. Inevitably the thesis of the *Philosophical Investigations* cannot be stated. It is merely *shown* or demonstrated through the presentation of examples or what the author has himself described as philosophical remarks. Moreover, there is no logical sequence or connection between one remark and the next. As the author explains, the very nature of the investigation compels him to go criss-cross in every direction. This gives the book an enigmatic, mysterious character and makes summary entirely impossible. This being the case we propose to examine more fully those paragraphs in which Wittgenstein speaks of games, for the likeness between language and games appears to be his favourite simile. Wittgenstein refers to language as a whole as a game, and he also speaks of different language-games. A language-game is a way, actual or invented, in which language may be used. (*Investigations*, para 7.).

First of all we should point out that like a game, language is a living and growing activity. To ask how many kinds of sentences there are, is like asking how many kinds of games there are. Wittgenstein answers that there are innumerable kinds of use of symbols, words, sentences, just as there are of games. Moreover this multiplicity is not something fixed that can be stated' once for all. New games are invented and old ones are forgotten. (para 23).

Secondly, language-games differ from each other. Moving pieces on a board according to rule is a game, but this applies only to board games. There are card games and ball games, including a child playing with a ball where there are no rules; the Olympic games and also ring-a-ring-of-roses. Wittgenstein's purpose in emphasising the variety of games is to bring home to us that each game is a legitimate game though each might fulfil a different function. Similar are the various uses of language and the different ways in which words *mean* in different language-games. Consider in this context the following examples:—giving orders and obeying them; reporting an event; speculating about an event; guessing riddles; making a joke; asking, thinking, cursing, greeting, praying. The philosopher must observe language and describe it, not prescribe limits to it.

This leads us on, thirdly, to enquire whether or not there is something common to the different uses of the word game. What Wittgenstein says here is of crucial importance and can be quoted with advantage.

"Don't say: There must be something common, or they would not be called 'games'—but look and see whether there is anything common at all.—For if you look at them you will not see something that is common to all, but similarities, relationships, and a whole series of them at that. To repeat: don't think but look!— Look for example at board games, with their multifari-

ous relationships. Now pass to card-games; here you find many correspondences with the first group, but many common features drop out, and others appear. When we pass next to, ball games much that is common is retained, but much is lost—Are they all 'amusing'? Compare chess with noughts and crosses. Or is there always winning and losing, or competition between players? Think of patience. In ball games there is winning and losing; but when a child throws his ball at the wall and catches it again, this feature has disappeared. Look at the parts played by skill and luck; and at the difference between skill in chess and skill in tennis. Think now of games like ring-a-ring-a-roses; here is the element of amusement, but how many other characteristic features have disappeared. And we can go through the many, many other groups of games in the same way; we can see how similarities crop up and disappear.

And the result of this examination is : we see a complicated network of similarities overlapping and criss-crossing ; some times overall similarities, sometimes similarities of detail.

I can think of no better expression to characterise these similarities than "Family resemblances" ; for the various resemblances between members of a family ; build, features, colour of eyes, gait, termperament, etc., etc., overlap and cross-cross in the same way. And I shall say ; 'games' form a family".

Fourth and lastly, Wittgenstein draws attention to the fact that games can be play·d even though there may be imprecision in the rules and even though there may be no rules on some points. The test is not whether there are loopholes but whether the rules are sufficient in number and clarity to make the game possible. Thus there is no rule regulating the height to which one may throw the ball when serving at tennis. And the same

applies also to words and sentences in language games. If a word is ambiguous or vague, it matters not so long as we are able to use it and so long as those who hear or read it know what we mean. (paras 84-88).

While Wittgenstein has some interesting things to say in criticism of philosophical analysis (paras 46-50), his references to "doing" philosophy are somewhat bare. "A main cause of philosophical disease—a one-side diet ; one nourishes one's thinking with only one kind of example". (para 593) And so we must assemble obvious reminders of obvious facts about the use of words to dispel philosophic confusion. A fuller exposition of what "doing" philosophy consists in, is to be found in the writings of John Wisdom, and we may well turn to them to supplement Wittgenstein's.

"Doing" philosophy is the resolution of philosophical that is, essentially linguistic puzzles. There are statements, says Wisdom, which lack a conventional usage.[1] The function of philosophy is to define this usage and to distinguish it from other statements which are similar. Thus, for instance, you may say "there are two white pieces and three black pieces so there are six pieces" is meaningless and also "I know directly what is going on in Smith's mind" is meaningless. But if you were to leave it at that Wisdom would accuse you of being dangerously misleading or saying something which was useless. The philosopher's function is to point out exactly how the first statement is meaningless, and how the second sentence is meaningless. You must compare and contrast the usage of the term meaningless in these two contexts.

Perhaps one further example of what constitutes a philosophical puzzle and how it is to be resolved might help to make the point clear : "People ask, 'If when

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1 *Philosophical Perplexity* : Proceedings of the Aristotelian Society Vol. 37, Page 71 etc. Interested students should see Strawson's critical notice of Philosophical Investigations in Mind, January 1954 and Moore's articles in Mind for January, July and October 1954.

a dog attacks her, a cow keeps her horns always towards him, so that she rotates as fast as he revolves, does he go round her' ?   We may imagine them offering reasons 'He does go round her, because he goes all round the place where she is standing, that is, encircles her. Therefore he goes round her. But, it may be protested, 'he never gets behind her, therefore, he doesn't go round her'.

Suppose the disputants now appeal to you and ask, 'which is right' or 'which do you think is right ?'

There is at once an inclination to answer, 'There is a sense in which he does and a sense in which he does not go round the cow'.   But this is untrue.   There are not in English two senses of 'go round' in one of which the answer is 'yes' while in the other it is 'no'. Had there been, the question would hardly have produced difficulty.   But the answer is not useless because it brings out how easily there might have been a use of language in which we should have had an answer ready and thus hints that the question is a matter of language. It is, however, *very* necessary to explain what sort of a question about language it is.

This appears if we set out the right way to deal with the question.   One should say: You speak as if you are asking a question about the dog and the cow. But you know the facts about them.   And what is more you know the answer to the question, "What would ordinarily be said in such a case when the question is put 'Did the dog go round the cow' ?" "For you know that people would hesitate and some insist, though with a certain bravado, that he did and others that he did not.   In asking me this question you are treating me like a judge of the High Court who is considering a question of law, not of fact, *e.g.*   "Was it in the case described reasonable and probable that someone would try to cash the cheque which Mr.   Smith made

out so carelessly ? Was it ? Or was it not ? Held that it was". Now I can of course give a decision if that is what you want. But you want more than that. You want me to sum up and bring out the features of the case which incline one to say that the dog went round the cow, and those which disincline one to say this. In this particular case, unlike other cases of the sort, this can be done fairly easily. For the features which incline one to say that the dog went round the cow are summed up in the statement 'He circled round the place where she stood'. While those which disincline one to speak so can be summed up in the statement "He did not change his position with respect to the parts of the cow'. Now you will notice that you who wished to say that the dog went round and your opponent who wished to say that it did not, had between you already described these features although at the time you regarded yourselves as giving reasons for its being right or wrong to say that the dog went round the cow. So you see you had already done what you wanted done though because you mistook the nature of your question, you did this in a misleading way. Had you put your question in the form, 'which of the features which we expect to find in a case when told that A has gone round B do we find in the case of the dog and the cow ? You would not have found yourself in difficulties."[1]

It will be clear that if the function of philosophy is the discovery of exposition or "the relation between different sub-languages within a language" the traditional categories of truth or falsity cannot be ascribed to answers to philosophical puzzles. Any answer is true or false, as you choose, within limits. Positivists therefore prefer to speak of answers as useless, misleading or illuminating. Thus, for instance, Wisdom describes

1 *Metaphysics and Verification*, Vol. 47. p. 493.

the statement that value is an ultimate predicate as use-less, it doesn't get you anywhere. The theory that we know sense-data, not objects, is misleading 'because it suggests that sense-data are a special sort of thing, extremely thin coloured pictures which stand between the mind and the object'. Philosophical theories are illuminating when they suggest or draw attention to a terminology which reveals likenesses and differences concealed by ordinary language'.[1] It may be men-tioned that whereas Wittgenstein tended to emphasise that philosophic theories were instances of confusion, Wisdom has drawn attention to the fact that they also display insight. There are family *resemblances* in addition to family *differences.* These differences of emphasis apart, the views of these two writers are substantially the same.

Here then, we must leave our preliminary enquiry into the problems of philosophy. Philosophy today seems indeed to have reached a dead end ; the doctrines of Wittgenstein bear more than a family resemblance to those of Hume. Philosophy awaits the arrival of a new Kant. Will he come ?

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1 *Philosophical Perplexity*

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